

Basic Assessment Report



edtea

Department :
Economic Development, Tourism and
Environmental Affairs
PROVINCE OF KWAZULU-NATAL

(For official use only)

EIA File Reference Number:
NEAS Reference Number:
Waste Management Licence Number:
(if applicable)
Date Received:

BASIC ASSESSMENT REPORT

Submitted in terms of the Environmental Impact Assessment Regulations, 2010 promulgated in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998)

This template may be used for the following applications:

- **Environmental Authorization** subject to basic assessment for an activity that is listed in Listing Notices 1 or 3, 2010 (Government Notices No. R 544 or No. R 546 dated 18 June 2010); or
- **Waste Management Licence** for an activity that is listed in terms of section 20(b) of the National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008) for which a basic assessment process as stipulated in the EIA Regulations must be conducted as part of the application (refer to the schedule of waste management activities in Category A of Government Notice No. 718 dated 03 July 2009).

Kindly note that:

1. This **basic assessment report** meets the requirements of the EIA Regulations, 2010 and is meant to streamline applications. This report is the format prescribed by the KZN Department of Economic Development, Tourism & Environmental Affairs. Please make sure that this is the latest version.
2. The report must be typed within the spaces provided in the form. The size of the spaces provided is not indicative of the amount of information to be provided. The report is in the form of a table that can extend itself as each space is filled with text.
3. Where required, place a cross in the box you select.
4. An incomplete report will be returned to the applicant for revision.
5. The use of "not applicable" in the report must be done with circumspection because if it is used in respect of material information that is required by the competent authority for assessing the application, it will result in the rejection of the application as provided for in the regulations.
6. No faxed or e-mailed reports will be accepted.
7. The report must be compiled by an independent environmental assessment practitioner ("EAP").
8. Unless protected by law, all information in the report will become public information on receipt by the competent authority. Any interested and affected party should be provided with the information contained in this report on request, during any stage of the application process.
9. The KZN Department of Economic Development, Tourism & Environmental Affairs may require that for specified types of activities in defined situations only parts of this report need to be completed.
10. The EAP must submit this basic assessment report for comment to all relevant State departments that administer a law relating to a matter affecting the environment. This provision is in accordance with Section 24 O (2) of the National Environmental Management Act 1998 (Act 107 of 1998) and such comments must be submitted within 40 days of such a request.
11. **Please note that this report must be handed in or posted to the District Office of the KZN Department of Economic Development, Tourism & Environmental Affairs to which the application has been allocated (please refer to the details provided in the letter of acknowledgement for this application).**

"Leading the attainment of inclusive growth for job creation and economic sustenance"

DEPARTMENTAL REFERENCE NUMBER(S)

File reference number (EIA):	
File reference number (Waste Management Licence):	

SECTION A: DETAILS OF THE ENVIRONMENTAL ASSESSMENT PRACTITIONER AND SPECIALISTS

1. NAME AND CONTACT DETAILS OF ENVIRONMENTAL ASSESSMENT PRACTITIONER (EAP)

Name and contact details of the EAP who prepared this report:

Business name of EAP:	Nzingwe Consultancy		
Physical address:	34 Essex Terrace Office 1004 Westville		
Postal address:	P O Box 2336. Westville		
Postal code:	3630	Cell:	071 294 7225
Telephone:	031 267 0289	Fax:	086 662 1789
E-mail:	nzingwe@nzingwe.co.za		

2. NAMES AND EXPERTISE OF REPRESENTATIVES OF THE EAP

Names and details of the expertise of each representative of the EAP involved in the preparation of this report:

Name of representative of the EAP	Education qualifications	Professional affiliations	Experience at environmental assessments (yrs)
Ms. Kudakwashe M Zhandire	BA Geography & Environmental Science		4 years
Silindile Nqoko	BSc Environmental Science	IAIAsa	6 years

3. NAMES AND EXPERTISE OF SPECIALISTS

Names and details of the expertise of each specialist that has contributed to this report:

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

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SECTION B: ACTIVITY INFORMATION

1. PROJECT TITLE

Describe the project title as provided on the application form for environmental authorization:

JIMANI BRIDGES

2. PROJECT DESCRIPTION

Provide a detailed description of the project:

Project Description

The proposed project entails construction of two precast concrete box culvert bridges which will be 6.1m wide and 5.1m long with a reinforced concrete slab with a 2000mm thickness.

Locality Map

When coming from Ulundi, drive on the R34 towards Vryheid and continue for about 90.8km until you reach the Mondlo Junction and turn left towards Mondlo. Continue for 14.3km and then turn left before reaching Mondlo. This is where the project site is located.

3. ACTIVITY DESCRIPTION

Describe each listed activity in Listing Notice 1 (GNR 544, 18 June 2010), Listing Notice 3 (GNR 546, 18 June 2010) or Category A of GN 718, 3 July 2009 (Waste Management Activities) which is being applied for as per the project description:

<p>Listing 1, Activity 11:</p> <p>The construction of: (xi) infrastructure covering 50 square metres or more</p> <p>where such construction occurs within a watercourse, measured from the edge of a watercourse, excluding where such construction will occur behind the development setback</p>	<p>The proposed project triggers activity 11 as a portion of the site is within a wetland area and construction therefore occurring either within a wetland or within 32m of a wetland.</p>
<p>Listing 1, Activity 18:</p> <p>The infilling or dredging 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 from a watercourse;</p>	<p>bridge construction activities will include excavation of topsoil and layering of the gravel material to be used for the bridge surface. Therefore, the project will include excavation and deposition of material which is in excess of 5 cubic metres in areas where construction occurs within a wetland area.</p>

4. FEASIBLE AND REASONABLE ALTERNATIVES

“alternatives”, in relation to a proposed activity, means different means of meeting the general purpose and requirements of the activity, which may include alternatives to—

- (a) the property on which or location where it is proposed to undertake the activity;
- (b) the type of activity to be undertaken;
- (c) the design or layout of the activity;
- (d) the technology to be used in the activity;
- (e) the operational aspects of the activity; and
- (f) the option of not implementing the activity.

Describe alternatives that are considered in this report. Alternatives should include a consideration of all possible means by which the purpose and need of the proposed activity could be accomplished in the specific instance taking account of the interest of the applicant in the activity. The no-go alternative must in all cases be included in the assessment phase as the baseline against which the impacts of the other alternatives are assessed. The determination of whether site or activity (including different processes etc.) or both is appropriate needs to be informed by the specific circumstances of the activity and its environment. After receipt of this report the competent authority may also request the applicant to assess additional alternatives that could possibly accomplish the purpose and need of the proposed activity if it is clear that realistic alternatives have not been considered to a reasonable extent.

(a) Property Alternative: Preferred

The site for the proposed Jimani Bridges is located within the KwaZulu Natal Income Sandy Grassland. In a large triangle between Newcastle, Vryheid and Dundee and larger polygon in the Wasbank area in northern KwaZulu-Natal. Altitude 880–1 340 m (mainly 1 120–1 240 m). Very flat extensive areas with generally shallow, poorly drained, sandy soils supporting low, tussock-dominated sourveld forming a mosaic with wooded grasslands (with *Acacia sieberiana* var *woodii*) and on well-drained sites with the trees *A. karroo*, *A. nilotica*, *A. caffra* and *Diospyros lycoides*. On disturbed sites *A. sieberiana* var *woodii* can form sparse woodlands. *Aristida congesta*, *Cynodon dactylon* and *Microchloa caffra* are common on shallow soils (Camp 1999b).

The current situation on site in terms of physical environment is that the site where the bridge is proposed is already being used. The community crosses the stream every day, kids going to schools and elders going to town or other villages. In the area proposed to be a bridge hence there is no infrastructure. At this moment there is nothing helping the community hence during heavy rains the structures on site either get washed away or blocked making it difficult for communities and general public to cross the river.

On both sites, the land comprises of bare/ disturbed soils and degraded/ alien invaded grass. The land (about 10m away from each side of the bridge) is mainly used for grazing of livestock and as such is disturbed. All disturbed areas will be rehabilitated post construction phase.

(b) Type of Activity to be Undertaken

During construction of this bridge it is anticipated that some boulders of rocks will be moved together with other soil material to one side of the river and be stored temporarily so that it is used during the rehabilitation of the affected area. It needs to be mentioned though that the site has no big boulders as such all rock material found onsite will be used back in retaining the river banks and in assisting in strengthening the retainer structure. During construction of this bridge there is no vegetation anticipated to be heavily affected other the normal grass which is already undermined by the existing structure. This grass is mainly the infertile grazing grass which the community livestock mostly use for feeding. However, in complying with the environmental legislation, during construction the planting of accepted individual vegetation will be done to assist further enhance the rehabilitation of each side of the bridge end and areas around the foot of the column.

(c) Design and Layout

The bridge is a precast concrete box culverts. Its 200mm thick reinforced concrete slab and it is 6.1 m wide by 5.1m long 90 mm thickness. The materials is concrete, precast concrete, steel, G7 and G6 material.

(d) Technology to be Used

Sections B 5 – 15 below should be completed for each alternative.

5. ACTIVITY POSITION

Indicate the position of the activity using the latitude and longitude of the centre point of the site for each alternative site. The co-ordinates should be in degrees, minutes and seconds. List alternative sites were applicable.

Alternative:	Latitude (S):			Longitude (E):		
Alternative S1 ¹ (preferred or only site alternative)	0	°	"	0	°	"
Alternative S2 (if any)	0	°	"	0	°	"
Alternative S3 (if any)	0	°	"	0	°	"

In the case of linear activities:

Alternative:	Latitude (S):			Longitude (E):		
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¹ "Alternative S.." refer to site alternatives.

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Alternative S1 (preferred or only route alternative)

- First proposed Bridge coordinates.

27°	57'	05.14"	30°	45'	28.62"
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- Second proposed bridge coordinates

27°	57'	52.58"	30°	46'	43.16"
-----	-----	--------	-----	-----	--------

Alternative S2 (if any)

- Starting point of the activity
- Middle point of the activity
- End point of the activity

0	€	"	0	€	"
0	€	"	0	€	"
0	€	"	0	€	"

Alternative S3 (if any)

- Starting point of the activity
- Middle point of the activity
- End point of the activity

0	€	"	0	€	"
0	€	"	0	€	"
0	€	"	0	€	"

For route alternatives that are longer than 500m, please provide an addendum with co-ordinates taken every 500m along the route for each alternative alignment.

6. PHYSICAL SIZE OF THE ACTIVITY

Indicate the physical size of the preferred activity/technology as well as alternative activities/technologies (footprints):

Alternative:

Alternative A1² (preferred activity alternative)

Alternative A2 (if any)

Alternative A3 (if any)

Size of the activity:

m ²
m ²
m ²

or, for linear activities:

Alternative:

Alternative A1 (preferred activity alternative)

Alternative A2 (if any)

Alternative A3 (if any)

Length of the activity:

Jimani bridge 6.1m wide by 5.1m long.
m
m

Indicate the size of the alternative sites or servitudes (within which the above footprints will occur):

Alternative:

Alternative A1 (preferred activity alternative)

Alternative A2 (if any)

Alternative A3 (if any)

Size of the site/servitude:

m2
m2
m2

7. SITE ACCESS

² "Alternative A.." refer to activity, process, technology or other alternatives.

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Does ready access to the site exist?

YES	NO
	m

If NO, what is the distance over which a new access road will be built

Describe the type of bridge planned:

There is gravel road around the site which can be used to access the site. The gravel road going to the Jimani village passes where the proposed bridge is going to be located.

Include the position of the bridge on the site plan and required map, as well as an indication of the bridge in relation to the site.

8. SITE OR ROUTE PLAN

A detailed site or route plan(s) must be prepared for each alternative site or alternative activity. It must be attached as Appendix A to this report.

The site or route plans must indicate the following:

- 8.1. the scale of the plan which must be at least a scale of 1:500;
- 8.2. the property boundaries and numbers/ erf/ farm numbers of all adjoining properties of the site;
- 8.3. the current land use as well as the land use zoning of each of the properties adjoining the site or sites;
- 8.4. the exact position of each element of the application as well as any other structures on the site;
- 8.5. the position of services, including electricity supply cables (indicate above or underground), water supply pipelines, boreholes, street lights, sewage pipelines, storm water infrastructure and telecommunication infrastructure;
- 8.6. walls and fencing including details of the height and construction material;
- 8.7. servitudes indicating the purpose of the servitude;
- 8.8. sensitive environmental elements within 100 metres of the site or sites including (but not limited thereto):
 - rivers, streams, drainage lines or wetlands;
 - the 1:100 year flood line (where available or where it is required by DWA);
 - ridges;
 - cultural and historical features;
 - areas with indigenous vegetation including protected plant species (even if it is degraded or infested with alien species);
- 8.9. for gentle slopes the 1 metre contour intervals must be indicated on the plan and whenever the slope of the site exceeds 1:10, the 500mm contours must be indicated on the plan; and
- 8.10. the positions from where photographs of the site were taken.

9. SITE PHOTOGRAPHS

Colour photographs from the centre of the site must be taken in at least the eight major compass directions with a description of each photograph. Photographs must be attached under Appendix

B to this report. It must be supplemented with additional photographs of relevant features on the site, if applicable.

10. FACILITY ILLUSTRATION

A detailed illustration of the facility must be provided at a scale of 1:200 and attached to this report as Appendix C. The illustrations must be to scale and must represent a realistic image of the planned activity/ies.

11. ACTIVITY MOTIVATION

11.1. Socio-economic value of the activity

What is the expected capital value of the activity on completion?	± RM
What is the expected yearly income that will be generated by or as a result of the activity?	There will be no yearly income.
Will the activity contribute to service infrastructure?	YES NO
Is the activity a public amenity?	YES NO
How many new employment opportunities will be created in the development phase of the activity?	+/-20 employees.
What is the expected value of the employment opportunities during the development phase?	+/-R120 per employee per day.
What percentage of this will accrue to previously disadvantaged individuals?	100%
How many permanent new employment opportunities will be created during the operational phase of the activity?	None of the employees will be temporary.
What is the expected current value of the employment opportunities during the first 10 years?	None
What percentage of this will accrue to previously disadvantaged individuals?	N/A

11.2. Need and desirability of the activity

Motivate and explain the need and desirability of the activity (including demand for the activity):

The Abaqulusi Local Municipality aims to unlock under and unused economic development potential but faces the challenge of poverty, and poor infrastructure and service provision. Initiatives such as the Rural Service System are embraced to alleviate rural poverty and inequitable distribution of services. The Municipality aims to achieve economic and social upliftment through provision of the appropriate services and infrastructure such as bridges. The bridge will provide easy access and efficient transportation to the local people. Without the project the Jimani community will continue to suffer on walking long distances and be left behind with opportunities in terms of service delivery. Therefore the urgency and the need for the bridge is vital to the community and the local people.

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The proposed bridge will help improve accessibility of the affected community thereby improving community cohesion. Economic activity would also be able to be broadened as lack of access to areas reduces the potential of economic activity. A bridge does not exist. The community crosses the stream hoping that they are safe and nothing wrong will compromise their safety. In rainy seasons if the flow of the water is for example rapid you stay on the side you're on. So if it's the morning you have to go to school or go to work, you'll have to stay at home. It's also needed to help when there's an emergency and ambulances can go through easily.

Indicate any benefits that the activity will have for society in general:

Easy accessibility to the area for the community, school children and vehicles. Emergency vehicles and public transport will have easy access to these parts and the elderly won't suffer from walking long distances carrying heavy bags from the groceries because a taxi will drop her outside his or her home. Emergency vehicles can fetch the sick at their homes because right now they being brought by a wheel barrow near the stream crossing.

Indicate any benefits that the activity will have for the local communities where the activity will be located:

The local community will mostly gain through the temporary employment opportunities which will be opened up during the construction phase. Employed locals will gain income and skills development for the project duration period. Access into communities adjacent to the proposed bridge will also benefit as there will be safe vehicular access into their homes created through the proposed bridge.

12. APPLICABLE LEGISLATION, POLICIES AND/OR GUIDELINES

List all legislation, policies and/or guidelines of any sphere of government that are relevant to the application as contemplated in the EIA regulations, if applicable:

Title of legislation, policy or guideline:	Administering authority:	Date:
National Environmental Management Act 107 of 1998 Section 28 "Duty of care, remediation and environmental damage"	Department of Agriculture, Environmental Affairs and Rural Development	1998
National Water Act 36 of 1998 Chapter 3 "Protection of water resources"	Department of Water Affairs	1998
National Water Services Act 108 of 1997 Section 3 "Right of access to basic water supply and sanitation"	Department of Water Affairs	1997
National Environmental Management: Waste Act 59 of 2008 Section 16 "General duty in respect of waste Management"	Department of Agriculture, Environmental Affairs and Rural Development	2008
National Environmental Management: Biodiversity Act 10 of 2004 Chapter 4 "Threatened and protected ecosystems and species"	Department of Agriculture, Environmental Affairs and Rural Development	2004

The Constitution of the Republic of South Africa (Act 108 of 1996) Section 24 “right to a clean and healthy environment”	National	1996
The National Heritage Resources Act 25 of 1999 Section 6 “principles for management of heritage resources”	AMAFA	1999
Occupational Health and Safety Act 85 of 1993 “Promoting a safe and healthy workplace”	Department of Labour	1993
National Health Act 61 of 2003 Section 3 “access to basic health services”	Department of Health	2003
Abaqulusi Municipality By Laws	Local Government Municipal Structures Act 117 of 1998 and Local Government Municipal Systems Act 32 of 2000	1998. 2000

13. WASTE, EFFLUENT, EMISSION AND NOISE MANAGEMENT

13.1. Solid waste management

Will the activity produce solid construction waste during the construction/initiation phase?

YES	NO
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If yes, what estimated quantity will be produced per month?

m ³

How will the construction solid waste be disposed of? (describe)

All waste produced on site will be collected will collected in to waste bins or site skips and thereafter disposed at a site where they are authorised and able to handle, dispose such waste. Waste will be separated into general and hazardous waste. It will then be handled and disposed on its own waste type by an authorised personal.

Where will the construction solid waste be disposed of? (provide details of landfill site)

Solid waste will be removed from site, collected and disposed at a relevant registered landfill site.

Will the activity produce solid waste during its operational phase?

YES	NO
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If yes, what estimated quantity will be produced per month?

m ³

How will the solid waste be disposed of? (provide details of landfill site)

N/A

Where will the solid waste be disposed if it does not feed into a municipal waste stream (describe)?

Mondlo local landfill site

If the solid waste (construction or operational phases) will not be disposed of in a registered landfill site or be taken up in a municipal waste stream, then the applicant should consult with the competent authority to determine the further requirements of the application.

Can any part of the solid waste be classified as hazardous in terms of the relevant legislation?

YES	NO
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If yes, contact the KZN Department of Economic Development, Tourism & Environmental Affairs to obtain clarity regarding the process requirements for your application.

Is the activity that is being applied for a solid waste handling or treatment facility?

YES	NO
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If yes, contact the KZN Department of Economic Development, Tourism & Environmental Affairs to obtain clarity regarding the process requirements for your application.

13.2. Liquid effluent

Will the activity produce effluent, other than normal sewage, that will be disposed of in a municipal sewage system?

YES	NO
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If yes, what estimated quantity will be produced per month?

m ³

Will the activity produce any effluent that will be treated and/or disposed of on site?

Yes	NO
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If yes, contact the KZN Department of Economic Development, Tourism & Environmental Affairs to obtain clarity regarding the process requirements for your application.

Will the activity produce effluent that will be treated and/or disposed of at another facility?

YES	NO
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If yes, provide the particulars of the facility:

Facility name:	N/A		
Contact person:	N/A		
Postal address:	N/A		
Postal code:	N/A		
Telephone:	N/A	Cell:	N/A
E-mail:	N/A	Fax:	N/A

Describe the measures that will be taken to ensure the optimal reuse or recycling of waste water, if any:

N/A

13.3. Emissions into the atmosphere

Will the activity release emissions into the atmosphere?

YES	
-----	--

If yes, is it controlled by any legislation of any sphere of government?

	NO
--	----

If yes, contact the KZN Department of Economic Development, Tourism & Environmental Affairs to obtain clarity regarding the process requirements for your application.

If no, describe the emissions in terms of type and concentration:

Construction Phase

During the construction phase, the construction vehicles will release emissions into the atmosphere and also there dust particles that will be released as a result of works such as excavation.

Operational Phase

Emissions will be released to the atmosphere due to the cars using the bridge.

Mitigation

A water carter must be used on a bare area to sprinkle water as a measure of dust suppression. Ensure that all vehicles are in good working condition and are well serviced.

13.4. Generation of noise

Will the activity generate noise?

YES	NO
YES	NO

If yes, is it controlled by any legislation of any sphere of government?

If yes, the applicant should consult with the competent authority to determine whether it is necessary to change to an application for scoping and EIA.

If no, describe the noise in terms of type and level:

Noise levels should be regulated by local municipal by-laws. Noise generation will be forth coming as a result of the construction phase. Noise will be limited to working hours (07h00 to 17h00) and will comprise of excavators and other machinery. Ambient noise levels are unlikely to exceed 75 dB for extended periods.

14. WATER USE

Please indicate the source(s) of water that will be used for the activity by ticking the appropriate box(es):

municipal	water board	groundwater	river, stream, dam or lake	other	the activity will not use water
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If water is to be extracted from groundwater, river, stream, dam, lake or any other natural feature, please indicate the volume that will be extracted per month:

	litres
Does the activity require a water use permit from the Department of Water Affairs?	YES NO

If YES, please submit the necessary application to the Department of Water Affairs and attach proof thereof to this report.

15. ENERGY EFFICIENCY

Describe the design measures, if any, that have been taken to ensure that the activity is energy efficient:

This is a bridge project so the activity will not require electricity but should the need that electricity is required power generator will be used.

Describe how alternative energy sources have been taken into account or been built into the design of the activity, if any:

No alternative energy is required but should it be a power generator will be used.

SECTION C: SITE/ AREA/ PROPERTY DESCRIPTION

Important notes:

- For linear activities (pipelines, etc) as well as activities that cover very large sites, it may be necessary to complete this section for each part of the site that has a significantly different environment. In such cases please complete copies of Section C and indicate the area, which is covered by each copy No. on the Site Plan.

Section C Copy No.
(e.g. A):

- Subsections 1 - 6 below must be completed for each alternative.

1. GRADIENT OF THE SITE

Indicate the general gradient of the site.

Alternative S1:

Flat	1:50 1:20	–	1:20 1:15	–	1:15 – 1:10	1:10 1:7,5	–	1:7,5 – 1:5	Steeper than 1:5
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Alternative S2 (if any):

Flat	1:50 1:20	–	1:20 1:15	–	1:15 – 1:10	1:10 1:7,5	–	1:7,5 – 1:5	Steeper than 1:5
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Alternative S3 (if any):

Flat	1:50 1:20	–	1:20 1:15	–	1:15 – 1:10	1:10 1:7,5	–	1:7,5 – 1:5	Steeper than 1:5
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2. LOCATION IN LANDSCAPE

Indicate the landform(s) that best describes the site (Please cross the appropriate box).

Alternative S1 (preferred site):

Ridgeline	Plateau	Side slope of hill/mountain	Closed valley	Open valley	Plain	Undulating plain/low hills	Dune	Sea-front
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Alternative S2 (if any):

Ridgeline	Plateau	Side slope of hill/mountain	Closed valley	Open valley	Plain	Undulating plain/low hills	Dune	Sea-front
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Alternative S3 (if any):

Ridgeline	Plateau	Side slope of hill/mountain	Closed valley	Open valley	Plain	Undulating plain/low hills	Dune	Sea-front
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3. GROUNDWATER, SOIL AND GEOLOGICAL STABILITY OF THE SITE

Has a specialist been consulted for the completion of this section?

YES	NO
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If YES, please complete the following:

Name of the specialist:	N/A		
Qualification(s) of the specialist:	N/A		
Postal address:	N/A		
Postal code:	N/A		
Telephone:	N/A	Cell:	
E-mail:	N/A	Fax:	
Are there any rare or endangered flora or fauna species (including red data species) present on any of the alternative sites?	YES	NO	
If YES, specify and explain:	N/A		
Are there any special or sensitive habitats or other natural features present on any of the alternative sites?	YES	NO	
If YES, specify and explain:	N/A		
Are any further specialist studies recommended by the specialist?	YES	NO	
If YES, specify:	N/A		
If YES, is such a report(s) attached in <u>Appendix D</u> ?	YES	NO	

Signature of specialist: _____ Date: _____

Is the site(s) located on any of the following (cross the appropriate boxes)?

	Alternative S1:		Alternative S2 (if any):		Alternative S3 (if any):	
Shallow water table (less than 1.5m deep)	YES	NO	YES	NO	YES	NO
Dolomite, sinkhole or doline areas	YES	NO	YES	NO	YES	NO
Seasonally wet soils (often close to water bodies)	YES	NO	YES	NO	YES	NO
Unstable rocky slopes or steep slopes with loose soil	YES	NO	YES	NO	YES	NO
Dispersive soils (soils that dissolve in water)	YES	NO	YES	NO	YES	NO
Soils with high clay content (clay fraction more than 40%)	YES	NO	YES	NO	YES	NO
Any other unstable soil or geological feature	YES	NO	YES	NO	YES	NO
An area sensitive to erosion	YES	NO	YES	NO	YES	NO

If you are unsure about any of the above or if you are concerned that any of the above aspects may be an issue of concern in the application, an appropriate specialist should be appointed to assist in the completion of this section. (Information in respect of the above will often be available as part of the project information or at the planning sections of local authorities. Where it exists, the 1:50 000 scale Regional Geotechnical Maps prepared by the Council for Geo Science may also be consulted).

4. GROUND COVER

Has a specialist been consulted for the completion of this section? YES NO

If YES, please complete the following:

Name of the specialist:	N/A		
Qualification(s) of the specialist:	N/A		

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Postal address:	N/A		
Postal code:	N/A		
Telephone:	N/A	Cell:	
E-mail:	N/A	Fax:	
Are there any rare or endangered flora or fauna species (including red data species) present on any of the alternative sites?	<input checked="" type="checkbox"/> YES	<input type="checkbox"/> NO	
If YES, specify and explain:	N/A		
Are there any special or sensitive habitats or other natural features present on any of the alternative sites?	<input checked="" type="checkbox"/> YES	<input type="checkbox"/> NO	
If YES, specify and explain:	N/A		
Are any further specialist studies recommended by the specialist?	<input checked="" type="checkbox"/> YES	<input type="checkbox"/> NO	
If YES, specify:	N/A		
If YES, is such a report(s) attached in <u>Appendix D</u> ?	<input type="checkbox"/> YES	<input type="checkbox"/> NO	
Signature of specialist: _____	Date:		

The location of all identified rare or endangered species or other elements should be accurately indicated on the site plan(s).

Natural veld - good condition ^E	Natural veld with scattered aliens ^E	Natural veld with heavy alien infestation ^E	Veld dominated by alien species ^E	Gardens
Sport field	Cultivated land	Paved surface	Building or other structure	Bare soil

If any of the boxes marked with an “E” is ticked, please consult an appropriate specialist to assist in the completion of this section if the environmental assessment practitioner doesn’t have the necessary expertise.

5. LAND USE CHARACTER OF SURROUNDING AREA

Cross the land uses and/or prominent features that currently occur within a 500m radius of the site and give a description of how this influences the application or may be impacted upon by the application:

Land use character			Description
Natural area	YES	NO	The activity transverses a natural vegetation.
Low density residential	YES	NO	The bridge will make it easy when going to residential areas. The majority of the residential home steads appear to be after the bridge when going to Jimani. The development will assist Ward 5 communities which are rural areas to have motor vehicle access.
Medium density residential	YES	NO	
High density residential	YES	NO	
Informal residential	YES	NO	

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Retail commercial & warehousing	YES	NO	
Light industrial	YES	NO	
Medium industrial	YES	NO	
Heavy industrial	YES	NO	
Power station	YES	NO	
Office/consulting room	YES	NO	
Military or police base/station/compound	YES	NO	
Spoil heap or slimes dam	YES	NO	
Quarry, sand or borrow pit	YES	NO	
Dam or reservoir	YES	NO	
Hospital/medical centre	YES	NO	
School/ creche	YES	NO	
Tertiary education facility	YES	NO	
Church	YES	NO	
Old age home	YES	NO	
Sewage treatment plant	YES	NO	
Train station or shunting yard	YES	NO	
Railway line	YES	NO	
Major road (4 lanes or more)	YES	NO	
Airport	YES	NO	
Harbour	YES	NO	
Sport facilities	YES	NO	
Golf course	YES	NO	
Polo fields	YES	NO	
Filling station	YES	NO	
Landfill or waste treatment site	YES	NO	
Plantation	YES	NO	
Agriculture	YES	NO	
River, stream or wetland	YES	NO	The activity transverses on an areas that appears to be a wetland and streams.
Nature conservation area	YES	NO	
Mountain, hill or ridge	YES	NO	
Museum	YES	NO	
Historical building	YES	NO	
Protected Area	YES	NO	
Graveyard	YES	NO	
Archaeological site	YES	NO	
Other land uses (describe)	YES	NO	

6. CULTURAL/ HISTORICAL FEATURES

Are there any signs of culturally or historically significant elements, as defined in section 2 of the National Heritage Resources Act, 1999, (Act No. 25 of 1999), including archaeological or palaeontological sites, on or within 20m of the site?

	NO
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If YES, contact a specialist recommended by AMAFA to conduct a heritage impact assessment. The heritage impact assessment must be attached as an appendix to this report.

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Briefly explain the recommendations of the specialist:

N/A

Will any building or structure older than 60 years be affected in any way?

NO

Is it necessary to apply for a permit in terms of the National Heritage Resources Act, 1999 (Act 25 of 1999)?

NO

If YES, please submit the necessary application to AMAFA and attach proof thereof to this report.

SECTION D: PUBLIC PARTICIPATION

1. ADVERTISEMENT

The person conducting a public participation process must take into account any guidelines applicable to public participation as contemplated in section 24J of the Act and must give notice to all potential interested and affected parties of the application which is subjected to public participation by—

- (a) fixing a notice board (of a size at least 60cm by 42cm; and must display the required information in lettering and in a format as may be determined by the competent authority) at a place conspicuous to the public at the boundary or on the fence of—
 - (i) the site where the activity to which the application relates is or is to be undertaken; and
 - (ii) any alternative site mentioned in the application;
- (b) giving written notice to—
 - (i) the owner or person in control of that land if the applicant is not the owner or person in control of the land;
 - (ii) the occupiers of the site where the activity is or is to be undertaken or to any alternative site where the activity is to be undertaken;
 - (iii) owners and occupiers of land adjacent to the site where the activity is or is to be undertaken or to any alternative site where the activity is to be undertaken;
 - (iv) the municipal councillor of the ward in which the site or alternative site is situated and any organisation of ratepayers that represent the community in the area;
 - (v) the local and district municipality which has jurisdiction in the area;
 - (vi) any organ of state having jurisdiction in respect of any aspect of the activity (as identified in the application form for the environmental authorization of this project); and
 - (vii) any other party as required by the competent authority;
- (c) placing an advertisement in—
 - (i) one local newspaper; or
 - (ii) any official *Gazette* that is published specifically for the purpose of providing public notice of applications or other submissions made in terms of these Regulations;
- (d) placing an advertisement in at least one provincial newspaper or national newspaper, if the activity has or may have an impact that extends beyond the boundaries of the metropolitan or district municipality in which it is or will be undertaken: Provided that this paragraph need not be complied with if an advertisement has been placed in an official *Gazette* referred to in subregulation 54(c)(ii); and
- (e) using reasonable alternative methods, as agreed to by the competent authority, in those instances where a person is desiring of but unable to participate in the process due to—

- (i) illiteracy;
- (ii) disability; or
- (iii) any other disadvantage.

2. CONTENT OF ADVERTISEMENTS AND NOTICES

A notice board, advertisement or notices must:

- (a) indicate the details of the application which is subjected to public participation; and
- (b) state—
 - (i) that an application for environmental authorization has been submitted to the KZN Department of Economic Development, Tourism & Environmental Affairs in terms of the EIA Regulations, 2010;(ii)
 - (iii) a brief project description that includes the nature and location of the activity to which the application relates;
 - (iv) where further information on the application can be obtained; and
 - (iv) the manner in which and the person to whom representations in respect of the application may be made.

3. PLACEMENT OF ADVERTISEMENTS AND NOTICES

Where the proposed activity may have impacts that extend beyond the municipal area where it is located, a notice must be placed in at least one provincial newspaper or national newspaper, indicating that an application will be submitted to the competent authority in terms of these regulations, the nature and location of the activity, where further information on the proposed activity can be obtained and the manner in which representations in respect of the application can be made, unless a notice has been placed in any *Gazette* that is published specifically for the purpose of providing notice to the public of applications made in terms of the EIA regulations.

Advertisements and notices must make provision for all alternatives.

4. DETERMINATION OF APPROPRIATE PROCESS

The EAP must ensure that the public participation process is according to that prescribed in regulation 54 of the EIA Regulations, 2010, but may deviate from the requirements of subregulation 54(2) in the manner agreed by the KZN Department of Economic Development, Tourism & Environmental Affairs as appropriate for this application. Special attention should be given to the involvement of local community structures such as Ward Committees, ratepayers associations and traditional authorities where appropriate.

Please note that public concerns that emerge at a later stage that should have been addressed may cause the competent authority to withdraw any authorisation it may have issued if it becomes apparent that the public participation process was inadequate.

5. COMMENTS AND RESPONSE REPORT

The practitioner must record all comments and respond to each comment of the public before this application is submitted. The comments and responses must be captured in a comments

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and response report as prescribed in the EIA regulations (regulation 57 in the EIA Regulations, 2010) and be attached as Appendix E to this report.

6. PARTICIPATION BY DISTRICT, LOCAL AND TRADITIONAL AUTHORITIES

District, local and traditional authorities (where applicable) are all key interested and affected parties in each application and no decision on any application will be made before the relevant local authority is provided with the opportunity to give input. The planning and the environmental sections of the local authority must be informed of this application and provided with an opportunity to comment.

Has any comment been received from the district municipality?

YES NO

If "YES", briefly describe the feedback below (also attach any correspondence to and from this authority with regard to this application):

No comment

Has any comment been received from the local municipality?

YES NO

If "YES", briefly describe the feedback below (also attach any correspondence to and from this authority with regard to this application):

The Abaqulusi Local Municipality is the Applicant

Has any comment been received from a traditional authority?

YES NO

If "YES", briefly describe the feedback below (also attach any correspondence to and from this authority with regard to this application):

The Empangisweni Traditional Authority was presented with the details of the project and welcome the proposed development.

7. CONSULTATION WITH OTHER STAKEHOLDERS

Any stakeholder that has a direct interest in the site or property, such as servitude holders and service providers, should be informed of the application and be provided with the opportunity to comment.

Has any comment been received from stakeholders?

YES NO

If "YES", briefly describe the feedback below (also attach copies of any correspondence to and from the stakeholders to this application):

A public meeting was held with the local community members and minutes of those meetings are attached as Appendix E.

SECTION E: IMPACT ASSESSMENT

The assessment of impacts must adhere to the requirements in the EIA Regulations, 2010, and should take applicable official guidelines into account. The issues raised by interested and affected parties should also be addressed in the assessment of impacts.

1. ISSUES RAISED BY INTERESTED AND AFFECTED PARTIES

List the main issues raised by interested and affected parties.

Still in the Draft stage

Response from the practitioner to the issues raised by the interested and affected parties (A full response must be given in the Comments and Response Report that must be attached as Appendix E to this report):

2. IMPACTS THAT MAY RESULT FROM THE PLANNING AND DESIGN, CONSTRUCTION, OPERATIONAL, DECOMMISSIONING AND CLOSURE PHASES AS WELL AS PROPOSED MANAGEMENT OF IDENTIFIED IMPACTS AND PROPOSED MITIGATION MEASURES

2.1. IMPACTS THAT MAY RESULT FROM THE PLANNING AND DESIGN PHASE

a. Site alternatives

List the potential impacts associated with site alternatives that are likely to occur during the planning and design phase:

Alternative S1 (preferred alternative)

Direct impacts:

Improper site specific designs:

The engineer and the surveyor must ensure that they possess prior knowledge of the site before designs are drawn up. This will avoid further degradation and potential irreversible damage of the environment and also ensure that the designs of the bridge reflect the characteristics of the site also taking into consideration water table of the area.

Access to proposed sites (physical).

Access to the proposed bridge is available from the existing vehicle track then disturbance could be experience where the new servitudes are acquired on the stream crossing.

Improper alignment:

The proposed bridges calculations of the horizontal and vertical dimensions of the must be properly aligned with the road. This will have a huge impact on the visual aesthetics of the area and as well storm water management planning will be altered resulting in further erosion and potential river sedimentation.

Environmental assessment planning:

Improper environmental assessment in the planning phase process to ensure impacts are anticipated in the early stages of the project.

Acquiring permits:

All the relevant permits must be acquired prior to construction. The community must be notified when the project is about to commence in order to limit unnecessary delay that may arise. Permits for borrow pits, permits for the removal of certain indigenous or protected trees, and also for the removal of certain heritage artefacts found on site must be obtained.

Improper selection of materials:

Selection of source material for the proposed project could lead to a situation where construction is delayed due to lack of supplies which will add unplanned costs.

Indirect impacts:

In the event that the proposed activity of the construction of a bridge is not approved it will result in the designs not being required. Impacts associated with the planning phase will not be applicable to the site since there is no bridge to be constructed. No infrastructural development will be experienced by the community as there prevailing of not having access will still be experienced. The government would have failed the people in providing proper infrastructural development. The local community members will lose faith in the ability of the local municipality to provide proper service infrastructure.

Alternative S2 (if any)

No-go alternative (compulsory)

Direct impacts: Indirect impacts and Cumulative Impacts

If the engineer and surveyor don't go to the site and understand what is happening on the ground so that the design and planning talks to the site. Avoid ongoing erosion and degradation of the bridge. Vegetation destruction as a result or due to extreme weather conditions. In the event that the proposed activity of the construction of a bridge is not approved it will result in the designs not being required. Impacts associated with the planning phase will not be applicable to the site since there is no bridge to be constructed. No infrastructural development will be experienced by the community as there prevailing of not having access will still be experienced. The government would have failed the people in providing proper infrastructural development. The local community members will lose faith in the ability of the local municipality to provide proper service infrastructure.

Indicate mitigation measures to manage the potential impacts listed above:

Alternative S1

Improper site specific designs:

The engineer must ensure that the characteristics of the site (topography, vegetation) are incorporated into the design of the bridge. A site inspection must be conducted prior to finalising the design for the project.

Access to proposed route (physical).

Vegetation clearing, to gain access to the proposed route will be kept to a minimum and the servitude. Minimal bush clearing will be undertaken in sensitive vegetation the surveyor will be inducted on all indigenous plants found in the area. Small amounts of vegetation will be cleared during survey however; this will be limited to survey pegs.

Improper bridge alignment: the horizontal and vertical alignment during the planning:

The engineer and the surveyor must ensure that the bridge is aligned according to the characteristics of the site (gentle and undulating); this will impact less on the visual aesthetics of the site.

Environmental assessment planning:

The environment must be catered for in the planning for the bridge. This will prevent the potential loss habitat and disturbance of natural vegetation within the development footprint. Also the incorporation of the impacts and mitigations of the wetland specialist would assist in reducing negative environmental impacts. Environmental assessment must be done in the planning phase process to ensure impacts are mitigated early stages of the project.

Acquiring Permits:

The planning team must ensure that all required and relevant permits pertaining to the construction of the proposed development are obtained from various state and other departments prior to the project reaching the construction phase. Permits for borrow pits, permits for the removal of certain indigenous or protected trees, and also for the removal of certain heritage artefacts found on site. Landowners' notification must also be obtained and consented by the Landowners.

Improper selection materials:

The project team must ensure that all the required proper material is used and sourced for the project to avoid time delays.

b. Process, technology, layout or other alternatives

List the impacts associated with any process, technology, layout or other alternatives that are likely to occur during the planning and design phase (please list impacts associated with each alternative separately):

Alternative A1 (preferred alternative)

Direct impacts:

Direct impacts:

Direct impact is likely to be presented in the construction phase. The following impacts have been identified:

Air Quality:

The construction activity will impact on the air quality of the area and there will be a lot of dust particles in the air also emissions from construction vehicles and mobile plant/machinery on site.

Noise:

The ambient noise levels are expected to increase due to the nuisance of construction vehicles and the labour force.

Topography:

The excessive use of heavy machinery will result in the alteration of the topography and potentially irreversible damage. Heavy machinery will potentially cause instability of the topography.

Soil erosion and Sedimentation:

The use of heavy machinery in areas sensitive to erosion like the riparian area will cause excessive soil erosion. There is a potential displacement of culverts to be affected by soil erosion.

Health and Safety:

Due to the large number of machinery and activities in the construction site there is potential for construction workers to be at risk from physical injury

Indirect impacts:

The community expectations would be raised. The biggest socio - economic benefit by far will be access, such as access to education facility for children, government grant pay-out points, employment places, health facilities, potential public transport facilities and emergency services for all community members.

Cumulative impacts:

The bridge would allow for the Abaqulusi Municipality to provide more services in future. Benefits to the local communities will be the bridge that are readily available at all seasons.

Alternative A2 (if any)

No-go alternative (compulsory)

Direct impacts: Indirect impacts and Cumulative impacts:

In the event that activity should the construction of the bridge is not approved it will result in the design of the bridge not being needed. Impacts associated with the planning phase will not be applicable to the site since there is no bridge to be constructed. No infrastructural development will be experienced by the community as there prevailing of not having access will still be experienced. The government would have failed the people in providing proper infrastructural development. The local community members will lose faith in the ability of the local municipality to provide proper service infrastructure.

Indicate mitigation measures to manage the potential impacts listed above:

Alternative A1:

A site specific Environmental Management Programme (EMPr) must be drawn up for the mitigation of all impacts associated with the construction of Jimani bridge. An Environmental Control Officer (ECO) must be appointed for the construction phase to monitor the implementation of the EMPr.

Air Quality:

All vehicles must be properly serviced to reduce the gaseous emissions to the atmosphere. A water carter must be used on all bare areas on site as a dust suppression system. Also no burning of waste allowed on site.

Noise:

All construction vehicles and mobile plant must be equipped with silencers as to reduce the ambient noise levels in the area. Construction work must be conducted during the day (07:30 to 16:30) when many people are away. Ensure that employees are encouraged to no anti-social behaviour at all times.

Topography:

Avoid excessive excavation and also limit the use of heavy machinery as possible encourage as much labour intensive work as possible especially in steep and riparian areas to keep the topography of the site stable.

Soil Erosion:

Measure to prevent soil erosion in the form of diversion berms and sand bags must be implemented where applicable. The bridge must be carefully aligned to avoid erosion and the impedance of flows. The areas compacted by the heavy machinery must be rehabilitated; also an apron should be present at the culvert outlets and should be designed to dissipate the flows and prevent erosion.

Health and Safety:

The health and safety of workers must be protected and ensure that construction work is conducted in a manner that will not put any worker in a risk. Personal Protective Equipment must be used at all times.

2.2. IMPACTS THAT MAY RESULT FROM THE CONSTRUCTION PHASE

a. Site alternatives

List the potential impacts associated with site alternatives that are likely to occur during the construction phase:

Direct impacts:

Potential impacts on the biophysical environment

Disturbance of natural vegetation

Potential of disturbance of natural vegetation that must be removed from the working boundary to enable construction. Potential loss of mammals and birds because of the change of the natural vegetation. Some off the area is highly altered, indicated by the presence of alien vegetation. Hence very little change is expected in terms of biodiversity losses. Grass and plant species will be lost when clearing the site. Section of the proposed site is characterized by disturbed natural vegetation while other section is undisturbed natural vegetation. In certain areas degradation has occurred due to a number of alternative accesses being created by users and most areas are cleared. Erosion control measures to avoid or minimize erosion on the river banks must be put in place. Energy of the watercourse, this is negligible as the construction of the bridge is located on a flat terrain and the flow of water will be fairly constant. It should also be noted that the construction activities will commence in the dry winter months so the impacts are minimized. The morphology of the river should not be negatively impacted by the construction of the bridge or diversion of water.

Climate:

Construction must be conducted during the periods of low rainfall because the area shows signs of high water table and will have serious impacts in the form of soil erosion and stream sedimentation. If the climate and peak flows are not taken into consideration it will result in excessive erosion and unnecessary disturbance of natural ecosystems. Prolonged construction period will lead to further degradation of the surrounding environment.

Soil erosion

There is the potential for run-off to free flow resulting in soil erosion and ponding if construction areas are not graded and correct drainage is not implemented. Storm water contaminated with fuels and oils may infiltrate the soil and pollute the underground water.

Impact of Construction Camp

Construction camps might further contribute to possible indirect impacts due to the possible fuel spillage, and erosion due to various activities and movements of construction vehicles. Spillage may lead to contamination of soil and adjacent water bodies.

Loss of plant species

There is a potential loss of plant species when clearing the site for the proposed development. . A number of palm trees occur on site. Section of the proposed site is characterized by disturbed natural vegetation while other section is undisturbed natural vegetation.

Spread and impact of alien invasive plants

A number of alien invasive plant species and habitats that occur within the study area. Without mitigation, construction activities, particularly the disturbance of soils, will increase the risk of seed germination therefore spread and colonization by these plants.

Potential nuisance impacts

Construction activities are likely to generate nuisance impacts such as noise, dust, temporary disruption of access, littering, pollution and dumping of rubble.

Health and safety risks

Construction sites often attract an influx of job seekers and other opportunists or entrepreneurs selling food and goods to construction staff. The general increase in the number and movement of people in the area has the potential to cause an increase in criminal activities. During construction, the movement of traffic, heavy plant and building materials, and other construction activities may pose safety risks to people, livestock, pets and animals. Children are particularly vulnerable.

Solid waste

Solid waste will be generated during construction and will either be disposed of at a local registered landfill site or used as fill material.

Sewage and wastewater

Sewage and wastewater will be generated at the construction site which will be equipped with chemicals. Wastewater may potentially pollute soils, and underground and surface water.

Pollution of water:

Possibility of water contamination with oils from the machines during construction, however this will be monitored strictly by the ECO to ensure that measures are in place to prevent any contamination. During Construction there is a risk that construction materials may pollute the surface and/or ground water on the site. Substances such as cement residue are extremely significant damaging water quality and must be adequately controlled. In addition exposed surfaces during construction would provide a source of sediments to be taken up by storm water resulting in downstream sedimentation of the water resources.

Potential pollution of water resources and soils can occur from spillages and leakages of fuels and other chemicals used during construction, thus negatively affecting land use and or land users. Concrete mixing may cause pollution if not properly managed and confined. Topsoil that is contaminated by concrete wash hardens and becomes useless for growing of crops.

Indirect impacts:

A short term employment will be achieved during the construction phase since the area has a low employment rate.

Cumulative impacts:

Local communities will be positively impacted through opportunity - income derived benefits associated with better access to local infrastructures and places of employment. The local community member will be able to commute in a safely manner and thus have the opportunity to better their lives. No social and economic benefits will be experienced by the local community, as there will be no improvements in local services and infrastructure.

Alternative S2 (if any)

No-go alternative (compulsory)

Direct impacts:

None of the impacts identified at the proposed activity would occur in both negative and positive impacts if the project does not proceed. The current situation would still be experience by the disadvantage communities since the current situation would not be addressed.

Indirect impacts:

A short term employment will be created during the construction phase since the area is having a low employment rate.

Cumulative impacts:

The benefits that come with accessible bridge would not be achieved by the local community. The communities within Abaqulusi Municipality will not enjoy the benefits of having a bridge that will interlink the neighbouring communities. High fatality rate of the community members.

Indicate mitigation measures to manage the potential impacts listed above:

Alternate1

Direct impacts: Indirect impacts: Cumulative impacts:

Detailed management and mitigation measures are contained within EMP for Construction (Appendix F) and are supplemented by the following project-specific measures:

Potential impacts on the biophysical environment

Disturbance of natural vegetation and river banks:

Only vegetation traverse by the construction of the bridge will be cleared. Vegetation clearance must be kept to a minimal working area. Erosion can be minimized by ensuring that construction activities are confined to disturbed areas of the river banks. No faunal species must be harmed by construction staff during construction. As with non-grass species, grass removal and replanting must occur under supervision of the ECO or horticultural qualified person. Post construction phase, the disturbed areas must be rehabilitated by stabilizing the banks with gabions or geotextiles to ensure regrowth of riparian vegetation. On-going monitoring is required.

Climate:

Construction must be conducted during the periods of low rainfall/dry season because the area receives lots of rainfall to minimise the potential impacts like soil erosion in bare areas and sedimentation.

Soil erosion

There is the potential for run-off to free flow resulting in soil erosion and ponding if construction areas are not graded and correct drainage is not implemented. The erosion on river banks must be controlled during the construction phase. Erosion control measures must be implemented such as sand bags, brick wall and hessian sheet in steep sections to minimize soil erosion and sedimentation.

Impact of Construction Camp

Maintenance done on construction vehicles must be done in such a manner to prevent spillage of fuel and oils. After the completion of construction, any possible soil compaction and spillage of substances within the construction camp must be rehabilitated. No construction workers are permitted to be accommodated overnight on the site or in the site construction camp except for

security personnel. Construction camp must be erected where it will have the least environmental impacts. Appointment of an ECO to monitor the project.

Loss of plant species:

No vegetation must be cleared without the prior permission from the Engineer and ECO particularly in the steep areas and in the watercourse. Any indigenous trees or shrubs damaged or destroyed must be replaced at a 3:1 ratio. The Environmental Control Officer (ECO) must mark plant species that is to be conserved before the Contractor begins clearing the site. As work progresses the Contractor must check that vegetation clearing has the prior permission of the Engineer and ECO consent.

Spread and impact of alien invasive plants

During the site clearance a number of alien invasive plant species and habitats that manifest in the area. Without mitigation, construction activities, particularly the disturbance of soils, will increase the risk of seed germination therefore spread of alien plants. Alien plants must be controlled especially in the graded areas to avoid spreading.

Potential nuisance impacts:

Dust must be controlled to places where it causes nuisance to the direct affected residential areas. Noise must be kept to a minimum level and work must be during working hours of 07h00 – 17:00 where the community is directly affected. Vehicles and equipment must be operated and secured in such a way as to minimise risk to the public. Working teams on site must not interfere with the normal activities of the public.

Potential health and safety risks

Measures to minimise potential health and safety risks are provided in the EMPr and also includes the provision of the following:

- Provision of security personnel during construction.
- Display information regarding timing, nature and dangers of construction.
- Speed limit enforcement.
- Site demarcation.

Solid waste

Do not dump waste of any nature, or any foreign material into the river. Construction rubble or refuse must not be dumped in areas of natural vegetation and must be removed from the site.

Sewage and waste water

No domestic ablutions are to occur within the water course. During construction cleaning of tools, equipment, vehicles, swimming, washing of clothes is prohibited in the river. Prevent the discharge of water containing polluting

matter or visible suspended materials, fines and sediments directly into drainage lines or wetlands. Deflect any unpolluted water/runoff away from any dirty area (including plants, maintenance areas, workshops and Contractors yards).

Impact on pollution water quality

Do not dump waste of any nature, or any foreign material into the river system, drainage line or wetland. There must be no disruptions of river flow except where there is temporary river diversions. Pollution of the river water is avoided by strict control/handling of building materials such as cement and petrochemicals. Concrete and/or cement must not be mixed directly on the ground but must be mixed off-site or on a mixing board. Visible remains of concrete as a result of construction must be physically removed and disposed of as permitted wastes site.

Indirect impacts:

During the construction phase, temporal employment opportunities will be generated and with the Abaqulusi Local Municipality policy of employing local people, local communities will benefit from employment-derived income.

Cumulative impacts:

The community should guard against any treats that will be a negative impact to their infrastructure. The bridge is designed for vehicle and pedestrian access across the community and not for social and entertainment reasons such as play area for children and a gathering place for people.

b. Process, technology, layout or other alternatives

List the impacts associated with process, technology, layout or other alternatives that are likely to occur during the construction phase (please list impacts associated with each alternative separately):

Alternative A1 (preferred alternative)

Direct impacts:

Air Quality:

During the construction phase the quality of the air will be dully affected by the high level of movement of construction vehicles and machinery. Abundance of air emissions resulting from the machinery will impact in the air quality on site.

Noise:

The ambient noise levels are expected to increase due to the construction vehicles and the labourers on site.

Topography:

The excessive use of heavy machinery will result in the alteration of the topography and potentially irreversible damage. Heavy machinery will potentially cause instability of the topography.

Soil erosion:

The use of heavy machinery in areas sensitive to erosion like the riparian area will cause excessive soil erosion and potential loss wetland functionality. There is likely to be soil compaction in the areas traversed by heavy machinery.

Health and Safety:

Due the large number of machinery and activities in the construction site there is potential for construction workers to be at risk from physical injury.

Indirect impacts:

During the construction phase, temporal employment opportunities will be generated and with the Abaqulusi Local Municipality policy of employing local people, local communities will benefit from employment-derived income.

Alternative A2

No-go alternative (compulsory)

Direct impacts:

None of the impacts identified at the proposed activity would occur in both negative and positive impacts if the project does not proceed. The current situation would still be experience by the disadvantage communities since the current situation would not be addressed.

Indirect impacts :

A short term employment will be created during the construction phase since the area is having a low employment rate.

Cumulative impacts:

The benefits that come with accessible bridge would not be achieved by the local community. The communities within Abaqulusi Municipality will not enjoy the benefits of having a bridge that will interlink the neighbouring communities.

Indicate mitigation measures to manage the potential impacts listed above:

Alternative A1:

Direct impacts:

A site specific Environmental Management Programme (EMPr) must be drawn up for the mitigation of all impacts associated with the construction of the proposed Bridge. An Environmental Control Officer (ECO) must be appointed for the construction phase to monitor the implementation of the EMPr.

Air Quality:

All vehicles must be properly serviced to reduce the gaseous emissions to the atmosphere. A water carter must be used on all bare areas on site as a dust suppression system. Also no burning of waste allowed on site.

Noise:

All construction vehicles and mobile plant must be equipped with silencers as to reduce the ambient noise levels in the area. Construction work must be conducted during the day (07:30 to 16:30) when many people are away. Noise must be kept to a minimum, and work conducted during normal working hours only where neighbours are being directly affected. A maximum speed limit of 20 km per hour must be observed by all construction vehicles on site.

Topography:

Manual labour intensive must be employed especially around the water courses. Area traversed by trucks must be kept to a minimum and limited to a specific operational area. The soil profile should be maintained with sub-soil and topsoil being replaced in the correct sequence.

Soil erosion:

Soil erosion control structures such as temporary soil berms, sandbags or hessian sheet should be used to control runoff and sedimentation where necessary. Soil compaction must be minimized by keeping vehicle and construction plant access ways and parking areas to a minimum. Bare surfaces are grassed as soon as possible after construction to minimise time of exposure.

Health and Safety:

Provision of security personnel during construction. Provision of signage informing the public about the nature and danger of the construction. Speed limit enforcement must be maintained especially by the construction vehicles. Personal Protective Equipment must be used at all times. There must be health and safety talk before the commencement of work on a weekly basis.

Indirect impacts:

During the construction phase, temporal employment opportunities will be generated and with the Abaqulusi Local Municipality policy of employing local people, local communities will benefit from employment-derived income.

Cumulative impacts:

The community should guard against any treats that will be a negative impact to their infrastructure. The bridge is designed for vehicle and pedestrian access across the two communities and not for social and entertainment reasons such as play area for children and a gathering place for people.

2.3. IMPACTS THAT MAY RESULT FROM THE OPERATIONAL PHASE

a. Site alternatives

List the potential impacts associated with site alternatives that are likely to occur during the operational phase:

Alternative S1 (preferred alternative)

Direct impacts:

Improved access:

The proposed bridge and drainage structures have the potential to provide vehicle access to the area making it safer, more reliable and convenient for the community. Improved access will help bring forth to basic services such as water delivering, emergency vehicles and police vans. Water contamination as a result of bridge use by vehicles which are not roadworthy, that leaks oils which could be washed down to the river during rainy days. Destabilization of banks by cattle near river, as this area may be prone to an increase in residents for accessibility to transport. Safe access to goods and services and public transport in rainy weather.

Traffic-related impacts:

There will be a major change of traffic due to the safe and accessible bridge which will be dangerous for pedestrians.

Pollution impact:

During the operational phase a possible impact is that of pollution, through littering by pedestrians making use of the bridge as well as through polluted runoff from the bridge surface entering the river.

Erosion:

The culverts are likely to result in erosional channels immediately below the bridge especially during peak or flood flow of the stream.

Indirect impacts & Cumulative impacts

Local communities will be positively impacted through opportunity - income derived benefits associated with better access to local infrastructures and places of employment. The local community member will be able to commute safely and thus have the opportunity to better their lives.

Alternative S2 (if any)

No-go alternative (compulsory)

Direct impacts:

None of the impacts identified at the proposed activity would occur in both negative and positive impacts if the project does not proceed. The current situation would still be experienced by the disadvantaged communities since the current situation would not be addressed.

Indirect impacts:

A short term employment will be created during the construction phase since the area is having a low employment rate. Human health from communities downstream might be negatively affected.

Cumulative impacts:

The benefits that come with this accessible bridges would not be achieved by the local community. The communities within Abaqulusi Municipality will not enjoy the benefits of having a bridge that will interlink the neighbouring communities.

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Increased chances of diseases relating to water contamination as the result of oil leaks into the bridge washed to the river.

Indicate mitigation measures to manage the potential impacts listed above:

Alternative S1

Improve access:

The proposed bridge and drainage structures have the potential to provide vehicle access to the area making it safer, more reliable and convenient for the community. Improved access will help bring forth to basic services such as water delivering, emergency vehicles and police vans.

Traffic-related impacts:

Traffic sign must be put to warn motorist about the speed limit. The bridge and stormwater structures must be regularly maintained in order for it to be safe and accessible.

Pollution:

The stormwater structures are there to protect the bridge from being washed away not a social entertainment place and should be treated as viable commodity. Community awareness must be conducted to the public in order to make them aware of the important of the infrastructure. Awareness campaign during construction by Environmental Control Officer of the site by raising awareness of the risk that the completed bridge might have.

Erosion:

Monitoring the rehabilitated area to ensure that vegetation grows and the area rehabilitated is compact, and cannot any stage collapse.

Indirect impacts & Cumulative impacts:

The local community members must be encouraged to take pride in their infrastructural development and also be advised not to contaminate the river with litter. The area must be kept as clean as possible for the sustainability of the surrounding habitat. Municipality should maintain the infrastructure so that it stays in a usable state. Stabilization of banks is carried out with soft engineering practices.

b. Process, technology, layout or other alternatives

List the impacts associated with process, technology, layout or other alternatives that are likely to occur during the operational phase (please list impacts associated with each alternative separately):

Alternative A1 (preferred alternative)

Direct impacts:

Impacts associated repair and maintenance work

During operation, repair and maintenance activities will be conducted. Most of the potential negative impacts associated with repair and maintenance are similar to construction phase impacts. The latter includes waste generation, air pollution, water pollution, noise, dust, surface runoff and erosion.

Indirect impacts: Cumulative impacts:

The community members must ensure the infrastructure is accessible and in a good condition that is in an acceptable standard. The community members must report any damage that they may see to the municipality to be fixed soon and not wait for it to be damaged completely.

Alternative A2

No-go alternative (compulsory)

Direct impacts, Indirect impacts, Cumulative impacts:

Without the project the positive and the negative impact relating to operation will not occur. Bridge maintenance remains very important and should the proposed construction not be maintained periodically then this would be detrimental to the bridge and to the community as their livelihood conditions will not have improved in anyway.

Indicate mitigation measures to manage the potential impacts listed above:

Alternative A1

Direct impacts:

Impacts associated repair and maintenance work

Impacts related potential negative impacts on the biophysical environment must be minimized. A detailed EMP (refer to Appendix F) must be used throughout the project circle to minimized the negative impacts associated with the project. Furthermore, the community members must inform the existing local communication structures and institutions (ward councilor, traditional authority and Abaqulusi Local Municipality) about any emergency repair and routine maintenance work. Information must be supplied regarding the expected types of repair/maintenance activities and anticipated timeframes for completion of work.

Indirect impacts & Cumulative impacts:

The community members should be made aware the importance of the bridge. It is the duty of community members to report any damage to the bridge that they see to the municipality so that it can be attended to immediately.

2.4. IMPACTS THAT MAY RESULT FROM THE DECOMMISSIONING OR CLOSURE PHASE

a. Site alternatives

List the potential impacts associated with site alternatives that are likely to occur during the decommissioning or closure phase:

Alternative S1 (preferred alternative)

Scio-Economic impact:

Although closure or decommissioning of the bridge is not expected, however should the need arise it would result in demolition of all structures and therefore all the impacts associated with construction phase be relived. Rehabilitation of the

demolished area will be a massive priority and the socio-economic conditions associated with the new infrastructure will also perish with the demolition of the structure.

Demolition-related impacts:

Demolition-related impacts such as potential noise, visual and biodiversity impacts are anticipated due to the likely requirement for construction machinery to be used in the demolition of the bridge. This impact is anticipated to be minor, although care will have to be exercised when facilities in close proximity to the site's aquatic features are demolished. The implementation of the construction phase EMPr will mitigate these potential impacts.

Indirect impacts:

There will be an increase of noise and dust from the demolition of the infrastructure. Movement of machinery and construction vehicle collecting the rubble from the site.

Cumulative impacts:

This would mean the current negative impacts of not having a bridge and will once again be experienced. The community will still continue to be hampered by the current mobility and infrastructure conditions. The local community members will once again feel excluded from society because of them being inaccessible.

Alternative S2

No-go alternative (compulsory)

Direct impacts:

Local community members will again be forced to cross the river at informal access points. During periods of flooding, they will again be at risk when trying to reach access points to get to medical clinic and work opportunities. Incidents of drowning and injury could potentially occur.

Indirect impacts:

The socio-economic status of the area will remain the same.

Cumulative impacts:

The benefits that come with accessible bridge would not be achieved by the local community. The communities within Abaqulusi Municipality will not enjoy the benefits of having a bridge that will interlink the neighbouring communities.

Indicate mitigation measures to manage the potential impacts listed above:

Alternative S1

Direct impacts:

Although closure or decommissioning of the bridge is not anticipated, however should the need arise it would result in demolition of all structures and therefore all the impacts associated with construction phase be removed. Rehabilitation of the demolished area will be a massive priority and the socio-economic conditions

associated with the new infrastructure will also perish with the demolition of the structure.

Indirect impacts:

The will be an increase of noise and dust from the demolition of the infrastructure. Movement of machinery and construction vehicle collecting the rubble from the site.

Cumulative impacts:

This would mean the current negative impacts of not having a bridge and will once again be experienced. The community will still continue to be hampered by the current mobility and infrastructure conditions. The local community members will once again feel excluded from society because of them being inaccessible

b. Process, technology, layout or other alternatives

List the impacts associated with process, technology, layout or other alternatives that are likely to occur during the decommissioning or closure phase (please list impacts associated with each alternative separately):

Alternative A1 (preferred alternative)

Direct impacts:

The proposed construction of the Jimani Bridge will be permanent and as such there will be no decommissioning or closure phase. However should the need arise that the closure or decommissioning of the bridge applied then the impacts associated with decommission will be relived. Rehabilitation of the demolished area will be a massive priority and the socio-economic conditions associated with the new infrastructure will also perish with the demolition of the structure.

Indirect impacts:

Movement of the construction vehicles on site to collected the rubble which will be generated out of the closure of the infrastructure.

Cumulative impacts:

This would mean the current negative impacts of not having a bridge will once again be experienced. The community will still continue to be hampered the current mobility and infrastructure conditions.

Alternative A2

No-go alternative (compulsory)

Direct impacts:

Local community members will again be forced to cross the river at informal access points. During periods of flooding, they will again be at risk when trying to reaching access points to get to medical clinic and work opportunities. Incidents of drowning and injury could potentially occur.

Indirect impacts:

The socio-economic status of the area will remain the same.

Cumulative impacts:

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The benefits that come with having a bridge would not be achieved by the local community. The communities within Abaqulusi Municipality will not enjoy the benefits of having a bridge that will interlink the neighbouring communities.

Indicate mitigation measures to manage the potential impacts listed above:

Alternative A1

The proposed construction of the Jimani Bridge will be permanent and as such there will be no decommissioning or closure phase. However should the need arise that the closure or decommissioning of the bridge applied then the impacts associated with decommission will be relived. Rehabilitation of the demolished area will be a massive priority and the socio-economic conditions associated with the new infrastructure will also perish with the demolition of the structure.

Indirect impacts:

Movement of the construction vehicles on site to collected the rubble which will be generated out of the closure of the infrastructure.

Cumulative impacts:

This would mean the current negative impacts of not having a bridge will once again be experienced. The community will still continue to be hampered the current mobility and infrastructure conditions.

2.5. PROPOSED MONITORING AND AUDITING

For each phase of the project and for each alternative, please indicate how identified impacts and mitigation will be monitored and/or audited.

Alternative S1 (preferred site)

The Constitution of the Republic of South Africa, 1993 (Act No. 200 of 1993): Section 24 read in conjunction with section 28 of NEMA makes provision of the Duty of Care and Remediation of Damage. This must be complied with and should non-compliance result then the necessary measures for repair must be implemented. The ultimate responsibility for ensuring compliance with the EMPr is the applicant and Contractors that will be employed.

Construction phase:

This must be monitored by the appointed independent Environmental Control Officer (ECO). The ECO must conduct at least one site visit per week particularly when construction is occurring within 32m of the watercourse.

Environmental Monitoring Audits must be undertaken by an independent Environmental Practitioner who will act as the ECO and these reports are to table at the monthly meetings. The ECO has the authority to instruct the Contractor to cease a particular operation causing significant environmental damage and issue fines and penalties for non-compliance. An Environmental Site Officer (ESO) must be appointed for ensuring the day-to-day implementation of the environmental management requirements for the construction phase. An ESO does not need to be independent as their responsibility is not that of auditing compliance of the EMPr or Environmental Authorisation (EA) but rather to insure the actual implementation of the EMPr and EA. An ESO can thus be a member of the Contractor's team who has

familiarised themselves with the EA and EMPr to an extent where they can give guidance as and when needed, however the ECO still has greater authority. The appointed ECO will be responsible to monitor the site specific EMPr compliance during the construction process.

The following must be critically monitored during construction:

- Water run - off
- Soil erosion control.
- Water contamination.
- Storm water management.

Operation phase:

The applicant must ensure regular inspections and scheduled maintenance of infrastructure. A post construction audit should be undertaken to ensure the EMPr requirements have been met. After the site visit, a final audit report will then be compiled and submitted to DEDTEA. The Abaqulusi Local Municipality will then after be responsible for the long-term maintenance of the bridge and drainage structures.

Alternative A1 (preferred alternative)

Construction Phase:

All the waste collected and disposed of at a registered land fill site. Limit construction activities resulting in noise generation to day time only. Dust generation must be limited and dust suppression be implemented when required. Demarcating of no go areas or sensitive areas. Demarcation of construction site or areas and prevent public access to these sites. Monitoring areas for pollution, erosion and degradation. Ensure implementation of identified rectifying measures. Compliance of EMPr and environmental authorisation by a contractor.

Operation Phase:

Rehabilitation at any damage to sensitive areas including potential erosion from construction activities or storm water runoff. Implement a process to capture and address recommendations, complaint or requests. Reduce waste to land fill site by minimising wastage site, sorting and recycling waste generated on site.

3. ENVIRONMENTAL IMPACT STATEMENT

Taking the assessment of potential impacts into account, please provide an environmental impact statement that summarises the impact that the proposed activity and its alternatives may have on the environment after the management and mitigation of impacts have been taken into account, with specific reference to types of impact, duration of impacts, likelihood of potential impacts actually occurring and the significance of impacts.

Alternative S1 (preferred site)

It is the opinion of the EAP that all potential impacts that could potentially occur during the construction and operational phase of the proposed bridge have been identified and key impacts and their mitigation measures are provided below.

Key Construction Impacts:

Damage to river and surrounding environment:

Specific concerns would be heavy vehicle traffic operating in close proximity to the river causing banks to erode and collapse, resulting in sedimentation of the river. Storage of materials and soil within or near the river could also result in the deposition of these materials into the river leading to contamination of the river system. Areas within the watercourse that are not within the construction footprint are sensitive and are to be treated as a 'no-go' zone. Heavy vehicles should be kept at least 50m away from any river except where needed for the construction of the bridge. As per the EMPr, no materials may be stored within 50m of the river. No dumping is to be permitted within these areas. Temporary flow diversions may be required during the construction of the structure as a dry surface is required for the concrete structure to set. However, only a portion of the stream may be diverted at any one time and flow must be maintained around the diversion at all times. Diversions must be removed once they are no longer required and may not be left in place indefinitely. The impacts are temporary in nature and can be mitigated but will require absolute compliance with the construction EMPr. This impact is rated as **medium**.

Key Operational Impacts:

Flooding and erosion

During operational phase of the development, rehabilitation measures must be implemented on the completion of construction activities. This will ensure that bridge banks stability is maintained and that sedimentation does not occur. The operational phase will have positive impacts for the community members as they will have a safer and more efficient means of traversing the area as well as having greater access to important transportation routes thereby making jobs, emergency services, schools and work opportunities more accessible. The above impacts can be mitigated against and are rated as **low**.

Destabilization and undermining of the structure

Poor construction could result in the development being undermined, destabilizing it and resulting in material loss. This impact can be mitigated against and is rated as **medium**.

Further to the above mitigation methods, an EMPr (Appendix F) has been developed to manage and control potential impacts. The EMPr should be implemented through monthly construction audits during which time recommendations within the EMPr should be enforced. If the EMPr is implemented correctly and the mitigation measures listed in this report are adhered to then the potential impacts associated with the bridge construction can be mitigated against. It is thus the opinion of the EAP that there are no significant environmental impacts associated with the proposal that cannot be mitigated against.

Alternative S2

N/A

Alternative A1 (preferred alternative)

Construction Phase

During construction, the river will be highly affected by construction activities. However, the river will be rehabilitated as far as possible after the construction is completed. The purpose for the construction of the bridge is to provide direct access to both community of Jimani. The most significant major positive effect that will be experienced during the bridge construction phase local community members getting short term employment and skills transfer that will be used for future jobs. These

members will also gain skills during their employment period which they can then use to gain other employment that may be on a more permanent basis and therefore have a sustainable improvement of livelihoods.

Operational Phase

Improved access to motor vehicles and therefore reduced distance travelled to access public transport. Local community members such as the elderly and children will no longer face the challenge of being at risk when trying to navigate in undefined roads a safer environment during high flow seasons.

Alternative A2

N/A

No-go alternative (compulsory)

The no-go alternative of not constructing the bridge will lead to the primary goal of improving mobility and accessibility of rural people not being met. The No Go alternative will also effectively negate the community wishes of the construction of the bridge and that provides a safe and efficient means of travelling across the two communities. The significance of this is that local community members will be forced to continue travelling at the current informal crossing points which at time are inaccessible. This is especially impossible during rainy seasons and schools and clinics are constantly closed due to the water table of the area being high since this area is flat water locked areas prove dangerous during these periods and could potentially result in further drowning incidents and will result in the continued restricted access of community members to important bridge. It is also expected that no new employment opportunities will be created for local residents during construction.

SECTION F. RECOMMENDATION OF EAP

Is the information contained in this report and the documentation attached hereto in the view of the EAPr sufficient to make a decision in respect of this report?

If “NO”, please contact the KZN Department of Economic Development, Tourism & Environmental Affairs regarding the further requirements for your report.

YES	NO

If “YES”, please attach the draft EMPr as Appendix F to this report and list any recommended conditions, including mitigation measures that should be considered for inclusion in any authorisation that may be granted by the competent authority in respect of the application:

The proposed bridge of Jimani has been found to have medium to negligible negative impacts, as well as notable positive impacts, should the preferred layout alternatives and recommendations be implemented. The development will have positive impact on a social status and economics status of the area hence the negative impact on ecology where sufficient mitigation has been recommended to reduce potential negative impacts to low levels and enhance positive impacts. All mitigation measures have been identified for the sufficient impacts. The proposed bridge construction is much needed by the affected two communities. The EAP believes that the proposed bridge will be sustainable in the long term, as service delivery and management of bridge network is improved and maintained into the

future. It is the opinion of the EAP that the activity should be authorised based on the mitigation measures conditions provided.

Preconstruction phase:

- Ecological Control Officer (ECO) to provide supervision and oversight of vegetation clearing activities within sensitive areas, facilitate the environmental induction of all construction staff, remove all fauna threatened by construction activities, ensure appropriate storage (and potential clean-up) of construction, general and hazardous waste etc.
- Minimise the footprint of the development within the sensitive areas. In particular the when constructing the bridge through indigenous vegetation. The section especially in the area where it is too slope manual construction is envisaged.
- Topsoil should be set aside and replaced after construction to encourage natural regeneration of the local indigenous species.
- Regular alien clearing within the sensitive areas.

Operational Phase

- Regular monitoring for erosion problems along the access track, especially in areas where runoff gets onto the bench from upslope.
- Erosion problems should be rectified on a regular basis.
- Pipes and aprons must be inspected on a regular basis for erosion problems and rectified where necessary.

SECTION G: APPENDIXES

The following appendixes must be attached as appropriate:

Appendix A: Site plan(s)

Appendix B: Photographs

Appendix C: Facility illustration(s)

Appendix D: Specialist reports

Appendix E: Comments and responses report

Appendix F: Draft Environmental Management Programme (EMPr)

Appendix G: Other information