



agriculture & environmental affairs

Department:
Agriculture
& 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:

KZN/EIA/

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 Agriculture & 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.

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9. The KZN Department of Agriculture & 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 Agriculture & Environmental Affairs to which the application has been allocated (please refer to the details provided in the letter of acknowledgement for this application).**

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:	Isolendalo Environmental Consulting		
Physical address:	1255 Mourant Rd, Margate 4275		
Postal address:	P. O. Box 439, Port Edward		
Postal code:	4295	Cell:	0834085737
Telephone:	0393171604	Fax:	0866604076
E-mail:	isolendalo@webmail.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)
Welcome Nogobela	B Honours Environmental Science	IAIA 3333	12

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

SECTION B: ACTIVITY INFORMATION

1. PROJECT TITLE

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

Blacktopping of a 5km existing access road over P17 and construction of 2 vehicular bridges over Nadi River

2. PROJECT DESCRIPTION

Provide a detailed description of the project:

Department of Transport (KZN) is proposing the following activities:

- 1) Upgrade the existing 2 bridges on P17 road both over Nadi River at Msinga Local Municipality under the Umzinyathi District Municipality. The proposed bridges are both 200m long and 5.7m wide.
- 2) Blacktopping (asphalt) the 5km stretch of this road (from km 47 to km 52 on P17 road), within the area where the bridges are proposed

The proposed road upgrade will be 8m wide by 5km, and all will be blacktopped with asphalt. This is inclusive of the drainage pipes along the side of the roads to assist and manage storm water and control erosion of sediments downstream.

In upgrading the two existing bridges the department (DoT) is proposing to remove the current structures as it poses danger to communities especially during heavy rains.

The existing structures also serves as impedance to the river flow, and the proposed bridge columns will be equal in relation to the current impedance found in the watercourse.

The current situation on site in terms of physical environment is that the site where the bridge is proposed is already being used at the bridge hence there is an infrastructure which was built sometime back by the government. At this moment, the existing bridges are not helpful to 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/ veld vegetation from sand mining activities. The land (about 10m away from each side of the road) is mainly used for grazing of livestock and as such is disturbed. The community also have small gardens for subsistence farming to sustain their homes. All disturbed areas will be rehabilitated post construction phase. The footprint of the bridge will not be located within this area but in a rocky portion of the degraded and or disturbed land.

The proposed bridge is proposed or suspended over the river next (approximately 3m away from the edge of the existing bridge) to the existing low level structure of the bridge. This proposed bridge consists of 10 concrete columns extending from the outer edge of each side of

the river bank to the center of the river.

As proposed in the layout plans by the engineer, two columns are proposed on each side of the river bank whilst the remaining 8 columns are spread evenly 8m apart from each other.

During the initial excavations in preparation of the columns, the initial step would be to divert one side of the river and as such water will be pumped out from one side of the river bank to the other side using a generator. This generator will be placed on top of the firm drip tray to allow for any unforeseen circumstance such as oil spill.

This diversion will minimally affect the flow or turbidity of the water but not so that it will cause significant erosion or disturbance to the river bed or banks. The pumping of the water will be consistent and at a rate that will be similar to that of the river system so as not to drastically change the energy of the system. The location of the generator will be on disturbed portions of the site and banks accommodating the pipes will be rehabilitated including any riparian vegetation lost. Construction will be carried out during the dry winter months where water flow will be reduced thus lessening the impact on the river system.

Once this process is done, the next step would be to dig for foundations of the columns and the steel structure for column to be placed firmly on the foundation. This steel will be hold firm by the concrete mix which would be transported from the factory to the site by means of the concrete mixer truck. The similar process will be done throughout the site in preparation for the bridge base until all is complete and the top structure of the bridge will only be assembled using similar approach (transported concrete mix and steel structure).

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 such as gabion 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 (edge columns only).

As such water use on site will be minimal as all material will be transported ready for use by the contractor.

It is therefore anticipated that water use would limited to a maximum of 1000 litres per month; which will most be for washing equipment which has no oil such as spades, cleaning of steel. However, washing of tools especially the big machine that is used for transporting the already mixed concrete will not be allowed as this will affect species down the river.

To ensure that there is no negative impact of the construction of the bridge on the river, the contractor will be forced to appoint suitable service provider to take water samples for testing on each side of the bridge (from top of the river to downstream).

With regard upgrading the existing road, as indicated in the application, Department of Transport (KZN) is proposing to blacktop the 5km stretch of the road starting from km 47 to km 52. This same area is the one where the two bridges are being proposed. In blacktopping the road, it is proposed that asphalt will be used.

Asphalt is a mixture of aggregates, binder and filler, used for constructing and maintaining all kind of roads, parking areas but also play- and sport areas. Aggregates used for asphalt mixtures could be crushed rock, sand, gravel or slags. In order to bind the aggregates into a cohesive mixture a binder is used. Most commonly, bitumen is used as a binder. An average asphalt pavement consists of the road structure above the formation level which includes unbound and bituminous-bound materials. This gives the pavement the ability to distribute the loads of the traffic before it arrives at the formation level.

Areas affected by construction activities outside the road reserve will be avoided but the most important aspect would be to undertake rehabilitation programme throughout all areas affected by the construction. This will require reshaping and vegetation of the areas outside the roadside drains.

3. ACTIVITY DESCRIPTION

Describe each listed activity in Listing Notice 1 (GNR 544, 18 June 2010), or 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:

The construction of:

- (i) canals;
- (ii) channels;
- (iii) bridges;
- (iv) dams;
- (v) weirs;
- (vi) bulk storm water outlet structures;
- (vii) marinas;
- (viii) jetties exceeding 50 square metres in size;
- (ix) slipways exceeding 50 metres in size;
- (x) buildings exceeding 50 square metres in size; or
- (xi) infrastructure or structures covering 50 square metres or more

where such construction occurs within a watercourse or within 32 metres of a watercourse, measured from edge of watercourse, excluding where such construction will occur behind the development set back line.

The proposed bridge will be constructed in the Ntinini River. The bridge will span the width of the river with 10 columns located therein for support of the concrete structure.

The infilling or depositing of any material of more than 5 cubic metres into, or the

dredging, excavation, removal or moving of soil, sand, shells, shell grit, pebbles or rock of more than 5 cubic metres from:

- (i) a watercourse;
- (ii) the sea;
- (iii) the seashore;
- (iv) the littoral active zone, an estuary or a distance of 100 metres inland of the high-water mark of the sea or an estuary, whichever distance is the greater-

but excluding where such infilling, depositing, dredging, excavation, removal or moving;

- (i) is for maintenance purposes undertaken in accordance with a management plan agreed to by the relevant environmental authority; or
- (ii) occurs behind the development setback line.

The proposed bridge requires the removal or moving of soil from the watercourse for the footprint of the bridge/columns and support structures of which it will be more than 5 cubic metres.

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.

No alternatives were considered other than the preferred. The proposed bridge will be constructed in Nadi. The Department of Transport proposes two (2) new bridges that will span the Nadi River and create a safe access for the community at large.

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The bridges are designed so as to cause minimal obstruction to the flow of the river. 10 columns will be constructed but the impedance to the flow of the water will be equivalent to the impacts already experienced with the low lying bridge and large boulders located in the river.

The site is adjacent to an existing low lying bridge which has a disturbed footprint. This is the ideal location as it is a flat area requiring only the necessary/minimal engineering, earthworks and is disturbed.

The bridge is designed so as to withstand the flow/ current of the river whilst ensuring that no flooding will occur to endanger its users. The bridge will span the river and be located 10 meters above the river bed.

The proposed bridge will serve as a one lane bridge and also for safe pedestrians access and use.

No-Go: Should the proposed bridge not be constructed, it will render the community and pedestrians prone to unsafe conditions with the existing bridge. These unsafe conditions range from flooding, resulting in drowning, instability/ integrity of the bridge is compromised by daily users as the bridge was built by the community and as such over time may require reinforcement. If the proposed bridge is not authorised, it will mean that a single lane bridge with no accommodation for pedestrian users will remain as the status quo. The community will have little to not access to services in peak rainfall seasons and also it will pose a hazard at night due to poor visibility of bridge and of other roads users!!

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)	30	59	01.624	28	12	31.487
Alternative S2 (if any)	0	'	"	0	'	"
Alternative S3 (if any)	0	'	"	0	'	"

In the case of linear activities:

Alternative:	Latitude (S):			Longitude (E):		
Alternative S1 (preferred or only route alternative)						
• Starting point of the activity	0	'	"	0	'	"
• Middle point of the activity	0	'	"	0	'	"
• End point of the activity	0	'	"	0	'	"

¹ "Alternative S.." refer to site alternatives.

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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)

or, for linear activities:

Alternative:

Alternative A1 (preferred activity alternative)

Alternative A2 (if any)

Alternative A3 (if any)

Size of the activity:

Alternative A1 ² (preferred activity alternative)	570m ²
Alternative A2 (if any)	m ²
Alternative A3 (if any)	m ²

Length of the activity:

Alternative A1 (preferred activity alternative)	m
Alternative A2 (if any)	M
Alternative A3 (if any)	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:

Alternative A1 (preferred activity alternative)	m ²
Alternative A2 (if any)	m ²
Alternative A3 (if any)	m ²

7. SITE ACCESS

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

Does ready access to the site exist?

YES

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

M

Describe the type of access road planned:

Not Applicable

Include the position of the access road on the site plan and required map, as well as an indication of the road 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?	R200m
What is the expected yearly income that will be generated by or as a result of the activity?	0
Will the activity contribute to service infrastructure?	YES
Is the activity a public amenity?	YES
How many new employment opportunities will be created in the development phase of the activity?	20
What is the expected value of the employment opportunities during the development phase?	R10m
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?	0
What is the expected current value of the employment opportunities during the first 10 years?	R0
What percentage of this will accrue to previously disadvantaged individuals?	0%

11.2. Need and desirability of the activity

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

There is a great demand for the department (DOT) to construct the bridge as at the moment the school children from either side struggle to cross the river especially after rains. There is unrecorded incidence where school kids and community member get drowned when trying to cross the river when it is flooded. This bridge will form an integral part of the community as it will be a safe, accessible connection point for the communities especially during peak rainfall periods. It will not hinder the children from gaining access to the schools during the rainy days and also for emergency services to access the community during this time.

As such, this bridge is needed not only by the school but also by the community at large from the either side of the river, including most basic services such as health services, crime prevention etc which ultimately will increase their standard of living.

At present the existing low lying bridge is more a safety hazard than a bridge as it compromises the safety of its users with it being low lying, and a single carriage with limited space for pedestrians to utilize.

The integrity of the existing bridge is questionable as it was built years ago by the community and as such requires upgrading/ reinforcement should it be utilised in the future.

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Utilisation of the existing bridge at night is equally hazardous for both pedestrians and vehicular use as it is not clearly visible with any signage.

The creation of new roads and bridges allows for the upliftment of previously disadvantaged communities by allowing them not just access to services but safe access thereto. This will further lead to development opportunities from external business entities as well as give local persons the opportunities to be self employed by opening shops and providing goods and services to the communities whilst also having the means via a safe road network system for them themselves to utilise.

The provision of safe, better access to services allows the community members to increase their standard of education in the nearby cities and utilising this to uplift the community i.e. teachers, nurses.

The provision of a good road network with safe bridges will allow for governmental bodies to be able to provide various services on a daily basis such as healthcare, policing/ security, education, agricultural assistance etc. to a disadvantaged community.

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

As indicated above, the construction of this bridge will improve the lives of the community in terms of easy access to their homes and also to enable access of basic services such as education, health services and also enhancement of efficient crime control (police service). Also, the number of people drowning as the result of crossing the river will decrease or stop as they will have the bridge to cross over.

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

This proposed bridge will form an integral part of the community as it will be a safe, accessible connection point for the communities especially during peak rainfall periods. It will not hinder the children from gaining access to the schools during the rainy days and also for emergency services to access the community during this time.

As such, this bridge is needed not only by the school but also by the community at large from either side of the river, including most basic services such as health services, crime prevention etc.

At present the existing low lying bridge is more a safety hazard than a bridge as it compromises the safety of its users with it being low lying, and a single carriage with limited space for pedestrians to utilize. The new bridge will allow safe access for pedestrians and vehicle users.

12. APPLICABLE LEGISLATION, POLICIES AND/OR GUIDELINES

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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:
EIA Regulations, 2010	Department of Agriculture and Environmental Affairs	2010
National Water Act, 1998	Department of Water Affairs	1998
National Environmental Waste Act, 59	Department of Agriculture and Environmental Affairs	2008
National Heritage Resources Act, 25	AMAFA	1999
The Constitution of the Republic of South Africa, 108	National	1996

13. WASTE, EFFLUENT, EMISSION AND NOISE MANAGEMENT

13.1. Solid waste management

Will the activity produce solid construction waste during the construction/initiation phase? NO

If yes, what estimated quantity will be produced per month? m³

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

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

Will the activity produce solid waste during its operational phase? NO

If yes, what estimated quantity will be produced per month? m³

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

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

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? NO

If yes, contact the KZN Department of Agriculture & 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? NO

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

13.2. Liquid effluent

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Will the activity produce effluent, other than normal sewage, that will be disposed of in a municipal sewage system? [REDACTED] NO

If yes, what estimated quantity will be produced per month? m³

Will the activity produce any effluent that will be treated and/or disposed of on site? [REDACTED] NO

If yes, contact the KZN Department of Agriculture & 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? [REDACTED] NO

If yes, provide the particulars of the facility:

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

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

13.3. Emissions into the atmosphere

Will the activity release emissions into the atmosphere? [REDACTED] NO

If yes, is it controlled by any legislation of any sphere of government? [REDACTED] NO

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

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

13.4. Generation of noise

Will the activity generate noise? [REDACTED] NO

If yes, is it controlled by any legislation of any sphere of government? [REDACTED] NO

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 generated will emerge from construction vehicles but will be limited to construction times. This will be no different than when the road users were utilising the existing bridge. Also, it is anticipated that the other noise will be due to drilling into some hard rocks if required and also blasting of some rocks, also if needed; but all this will be reported to community through ward councillor and community representative officer (CLO) 1 week advance.
Noise from the generator will be negligible and within construction hours, 7:30am to 4:30pm

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 x	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:

≤1000 litres

This use will be associated with use by the personnel on site for cooling of vehicles (if necessary). Should be noted that all material including concrete etc will be transported to site already prepared and ready to use

Does the activity require a water use permit from the Department of Water Affairs?

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 bridge will not need the use of energy during operation as it is a rural bridge and there is no plan to provide light at night. Only the reflector plates and signs will be used to guide drivers at night.

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

Not necessary as this activity does not need electricity.

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						
	X						

Alternative S2 (if any):

Flat	1:50	–	1:20	–	1:15 – 1:10	1:10	–	1:7,5 – 1:5	Steeper than
	1:20		1:15			1:7,5			1:5

Alternative S3 (if any):

Flat	1:50	–	1:20	–	1:15 – 1:10	1:10	–	1:7,5 – 1:5	Steeper than
	1:20		1:15			1:7,5			1:5

2. LOCATION IN LANDSCAPE

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

Alternative S1 (preferred site):

	Side slope of hill/mountain		Open valley	
	X		X	

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	
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If YES, please complete the following:

Name of the specialist:			
Qualification(s) of the specialist:			
Postal address:			
Postal code:			
Telephone:		Cell:	
E-mail:		Fax:	
Are there any rare or endangered flora or fauna species (including red data species) present on any of the alternative sites?			NO
If YES, specify and explain:			
Are there any special or sensitive habitats or other natural features present on any of the alternative sites?			NO
If YES, specify and explain:			
Are any further specialist studies recommended by the specialist?			NO
If YES, specify:			
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)		NO	NO
Dolomite, sinkhole or doline areas		NO	NO
Seasonally wet soils (often close to water bodies)		NO	NO
Unstable rocky slopes or steep slopes with loose soil		NO	NO
Dispersive soils (soils that dissolve in water)		NO	NO
Soils with high clay content (clay fraction more than 40%)		NO	NO
Any other unstable soil or geological feature		NO	NO
An area sensitive to erosion		NO	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?

	NO
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If YES, please complete the following:

Name of the specialist:			
Qualification(s) of the specialist:			
Postal address:			
Postal code:			
Telephone:		Cell:	
E-mail:		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:			
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:			
Are any further specialist studies recommended by the specialist?	YES	NO	
If YES, specify:			
If YES, is such a report(s) attached in <u>Appendix D</u> ?	YES	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).

	Gardens X
	Bare soil X

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	NO		
Low density residential	YES		
Medium density residential	NO		

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High density residential		NO	
Informal residential		NO	
Retail commercial & warehousing		NO	
Light industrial		NO	
Medium industrial		NO	
Heavy industrial		NO	
Power station		NO	
Office/consulting room		NO	
Military or police base/station/compound		NO	
Spoil heap or slimes dam		NO	
Quarry, sand or borrow pit	YES		
Dam or reservoir		NO	
Hospital/medical centre		NO	
School/ crèche	YES		
Tertiary education facility		NO	
Church	YES		
Old age home		NO	
Sewage treatment plant		NO	
Train station or shunting yard		NO	
Railway line		NO	
Major road (4 lanes or more)		NO	
Airport		NO	
Harbour		NO	
Sport facilities		NO	
Golf course		NO	
Polo fields		NO	
Filling station		NO	
Landfill or waste treatment site		NO	
Plantation		NO	
Agriculture		NO	
River, stream or wetland	YES		
Nature conservation area			
Mountain, hill or ridge	YES		
Museum		NO	
Historical building		NO	
Protected Area		NO	
Graveyard		NO	
Archaeological site		NO	
Other land uses (describe)		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 paleontological sites, on or within 20m of the site?

NO

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.

Briefly explain the recommendations of the specialist:

--

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 Agriculture & 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 Agriculture & 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 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):

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):

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):

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):

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.

Comment received by DWA (dated 7 May 2013):

1. Quantity of water being extracted being 1000l of water
2. Water-use license required
3. Description of site status required
4. Description of land-use characters
5. Lack of participation from local authorities and key stakeholders including I&Aps
6. The potential impacts of the activity on and the alteration of characteristics of the water course not predicted
7. Potential Impacts or extent of impacts that may result from the diversion or impedance of the water course during construction.
8. Method of working around the water resource banks and beds.
9. Methods that will be used to stabilize the banks
10. Provisions made for vehicular crossing during construction.

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):

1. The proposed construction activities may only use up to 1000l of water if any. Concrete and other material requiring a large amount of water will be brought into the site already prepared and ready for use.
2. As such no Water-use license is required as the use of water will be negligible.
3. A detailed description of the site has been included as well as the status quo thereof
4. Noted and information provided/finalised.
5. The report commented on by DWA was the draft Basic Assessment Report. This draft has been circulated to key stakeholders, district and local authorities and Interested and Affected Parties for comments. Once comments are received, it will be responded to.
6. Noted, Points 6, 7, 8, 9 & 10 will be discussed further in Section 2 below. The design of the bridge has taken into account the loss or damage of plants, animals and their habitats; being a barrier to the movement of fish and other wildlife; preventing natural river movement, increased flood risk and the potential to prevent sediment moving downstream. The impacts of the activity on the alteration of characteristics will be discussed in Section 2 below.
7. The proposed bridge will be constructed above the existing bridge so as not to add to impeding the flow of water in the river during the operation phase. The river will continue to function as is post construction phase. Diverting of water during the construction phase will be done so as to ensure that the river is flowing continuously and that the energy of the river is not altered significantly. The diversion of water will be temporary and limited to the construction phase. It should be noted that water quality tests will be carried out upstream, at source and downstream of the development site on a monthly basis during construction and after construction for 3 months to ensure that no pollution of the water resource has occurred and also to effect the necessary rehabilitation.

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: There are no anticipated significant impacts identified during this phase. Impacts would be negligible and associated with investigation of site to determine potential impacts associated with construction and operation of the proposed development.

The engineer must survey the location of the proposed ridge. Planning involves identifying the best site for the bridge and associated design.

As such the preferred site entails minimal environmental degradation as it is disturbed by current roadusers and the existing bridge and road. The chosen design of the bridge is pertinent to the terrain and status quo of the sites and takes into account the constraints of the topography and also the watercourse. The surrounding areas of the river must be viewed to ascertain the best and environmentally sound preferred site. It must be viable in terms of socio, economic and environmental impacts and also in terms of the terrain and constraints associated thereto.

Identification of disturbed areas for the construction camp must be undertaken. Also identification of the areas within the watercourse and river banks where construction activities occur must be restricted to those areas only so as to ensure minimal degradation to the environment.

The planning and design will ensure an improvement to the road network and access to public transport for the community.

Indirect impacts:

Loss of capital already invested in project should it not be authorised

Cumulative impacts:

Loss of capital already invested in project should it not be authorised

Alternative S2 (if any)

Direct impacts:

Indirect impacts:

Cumulative impacts:

No-go alternative (compulsory)

Direct impacts:

Should the bridge not be approved it would render the community vulnerable to unsafe conditions when utilising the bridge in peak rainfall periods. It would also contribute to a great loss of capital as money has been spent in designing this bridge. The local community will not have safe access to goods and services.

Indirect impacts:

There are no impacts identified during the planning and design phase

Cumulative impacts:

No significant impacts identified during the planning and design stages

Indicate mitigation measures to manage the potential impacts listed above:

Alternative S1

Alternative S2

The preferred alternative is designed so as to take into account the terrain and environmental constraints of the site. Disturbed areas within the footprint can be used for the movement of construction vehicles. All disturbed areas post construction will be rehabilitated.

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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:

The layout proposed incorporates the environmental constraints of the site. The design of the bridge is such that it will have minimal impacts to its environment and those impacts will be mitigated for. The impacts anticipated during this phase will be mitigated for.

Erosion control measures will be applied and will form part of the EMP. Soft engineering for reinforcement and stabilizing of banks will be used as opposed to hard engineering practices such as geo-textiles or gabions.

Indirect impacts:

The community will benefit socio economically and have safe transportation access to services offered in the larger towns and cities.

Cumulative impacts:

The bridge will be maintained by the Department of Transport and local municipality so as to protect their investment in the bridge. The bridge will allow for the potential of development within the community.

Alternative A2 (if any)

Direct impacts:

Indirect impacts:

Cumulative impacts:

No-go alternative (compulsory)

Direct impacts:

Should the bridge not be approved, it will result in a loss of capital invested already. The community will continue to live with a bridge that is unsafe during rainy weather and hazardous to their livelihood. Development potential will be nil and access to goods and services will be limited and dependant on weather.

Indirect impacts:

n/a

Cumulative impacts:

This bridge will improve socio economic development and access to goods and services

Indicate mitigation measures to manage the potential impacts listed above:

Alternative A1:

Alternative A2:

The layout and design has taken into account the terrain of the site. The environmental constraints have also been accounted for and the location is the best as it is within the same footprint as the existing bridge and road. No re-alignment of the road is required therefore less impact to the receiving environment.

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:

Alternative S1 (preferred site)

Direct impacts:

- Possibility of water contamination with oils from the machines during construction, however,

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this will be monitored strictly by the ECO to ensure that measures are in place to prevent any contamination.

- 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
- Riparian vegetation and disturbed grassland vegetation will be removed to allow access to the development site
- Less riparian vegetation may exacerbate fluctuations in the water temperature and reduce the concentration of oxygen by reducing shade.
- Degradation of stream and water quality: excavating or removal of sand can increase sediment load and turbidity downstream which may degrade the quality of domestic and live stock water supply.
- Flooding of river and banks due to new bridge
- Impacts of the activity on the characteristics of the river
- Construction related incidents such as spillages of fuel

Indirect impacts:

- Noise from construction workers and working machines, to be addressed to the community and only to be limited to accepted working hours
- Injuries by communities as the result of unsafe keeping of working implements. This to be addressed before construction could take place
- Waste material to be kept within working site and within waste bins.

Cumulative impacts:

- Reduced risk of further damages and degradation to environment
- Uncontrolled runoff and erosion from sites
- Proper rehabilitation measures to be used to prevent degradation of the areas affected by construction.

Alternative S2 (if any)

Direct impacts:

Indirect impacts:

Cumulative impacts:

No-go alternative (compulsory)

Direct Impacts

- No proposed bridge will imply that the status quo remains
- No safe access to goods and surfaces
- The flow of the river will continually be impacted on by the low lying causeway constructed by the community
- This bridge is vulnerable to flooding which creates a dangerous access for road users.

Indirect impacts:

- Effect of vegetation as the result of working outside demarcated site area.
- Continued sand mining activities will cause the banks to be de-stabilized and riparian vegetation removed

Cumulative impacts:

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- Socio –economic status of the community will remain as is and there would be no opportunities for businesses.

Indicate mitigation measures to manage the potential impacts listed above:

Alternative S1

- Monitoring contamination/ pollution of the water resource will include conducting monthly water quality tests upstream, at source and downstream of the construction activity. This will be done on a monthly basis and 3 months post construction. This will ensure that the increase in sediment load and turbidity downstream does not affect the quality of the water.
- Erosion can be minimized by ensuring that construction activities are confined to disturbed areas of the river banks
- 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.
- Energy of the water course can be mitigated by conducting the constructing activity in phases i.e. work on a particular segment of the river whilst diverting the water to the active part of the river. The flow of the water must be similar to that of the river current so as not to cause deposition of sediment.
- It is imperative that the construction occur during the dry season to lessen the impacts.
- The flow of water in the river will be diverted to within the river so that downstream users have access to water for sustenance. The flow of water must be diverted into a properly designed and constructed channel that has been stabilised.
- Due to construction occurring in the dry season, the turbidity of the river system should be able to accommodate the diverted water with minimum impact to the river bed and the aquatic environment or cause erosion to the banks.
- The river is overlain with rock so it is anticipated that the impact of the flow from the diverted water or the construction of the bridge will be negligible. This will ensure that the morphology of the river and its associated features will not be significantly/ negatively impacted on.
- The gradient of the area surrounding the proposed footprint for development is fairly flat and as such the stream power will be negligible during the dry season which would not cause significant changes to the morphology of the river or its aquatic habitat.
- The physical characteristics of the river will not be significantly altered except for the sight of a larger bridge.
- Fluvial processes in the river are crucial to the distribution of vital gases, nutrients and small organisms so the flow of the river to downstream users must not be stopped.
- Rivers are dynamic systems in that they are continuously adjusting to changes in discharge and sediment load.
- The river will revert to its natural function post construction and fulfil its intended role.
- Vegetation removed will be replaced post construction phase.
- The planning and design for the proposed development has taken into account the receiving environment in ensuring the preservation and protection of the ecosystem and or biodiversity features.
- Rehabilitation strategy of the site especially areas not to be affected by the development.
- Proper storm water management plan to address the issue of storm water and how it is going to be disposed or and managed.
- Close monitoring of the site by qualified Environmental Control Officer to ensure that the proposed development has a minimal impact on the receiving environment.
- Use of soft engineering solutions in connection with surfacing of the arrears not developed for vehicle parking. This will allow percolation and seepage of water into the ground without being contaminated with any oils or other negative effects.

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- Evaluation of designs and provide recommendations to limit and reduce environmental, social and economic impacts associated with the proposed activities.
- The disturbed areas must be planted with deep rooted vegetation to stabilise the banks, provide shade to control the water temperature and provide habitat and food.
- The flooding of the river will also be dependent on the gradient of the area and since it is fairly flat, the flood waters may move onto the land and remain there for days. The proposed bridge will not contribute to flooding of the river banks as it will be constructed higher than the existing bridge and will span the width of the river thus not impeding the flow of the water or causing it to dam and cause flash floods downstream.
- The construction of the bridge will not significantly impact on the biotic and abiotic environment of the river but will enhance the river aesthetically and environmentally as the degraded areas of the banks will be re-vegetated.
- To avoid soil and water contamination in cases where the machine being used are faulty, the contractor will have to make sure of the following:
 - Provision of drip trays all the time onsite
 - Placing of generators over the drip tray
 - Avoid soil erosion by ensuring that rehabilitation/landscaping in all areas where construction is taking place.
 - Provision of waste bins to avoid pollution by means of waste
 - Use of chemical ablution facilities to avoid air pollution

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:

- The noise, vehicle and people movement might be considered a priority and have to be managed accordingly.
- Pollution of immediate area surrounding the site will take place, this being in the form of construction rubble, dust and material stockpiles.
- Litter created by workers/ contractors would be required to be managed.
- Excavation activities with removal of vegetation and exposure of soils

Indirect impacts:

- Litter through the property as temporal storage for building material such as building sand, bricks etc.
- These might lead indirectly into air pollution or dust.
- Traffic interference by means of construction vehicles parking their cars in the road side might be of nuisance to the public. This will be controlled and managed by the site manager or contractor.
- Increased strain on natural resources
- Continued employment for contractors completing work within the surrounding area.

Cumulative impacts:

- Establishment costs increased
- Reduced risk to criminal activity
- Improved socio-economic benefits for the communities.

Alternative A2

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Direct impacts:

Indirect impacts:

Cumulative impacts:

No-go alternative (compulsory)

- Money invested will not be recovered and the proposed bridge will not be constructed rendering the existing bridge as the only means for crossing the river.
- The design of the existing bridge is low and prone to flooding and a hazard to the community

Indirect impacts:

- n/a

Cumulative impacts:

- n/a

Indicate mitigation measures to manage the potential impacts listed above:

Alternative A1:

- The design must take into account the dynamics of the river system and its associated processes.
- The bridge must span the river system so as to cause minimal impact to the river and to alleviate further flooding.

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:

- Water contamination as a result of road 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.
- Lack of maintenance of the proposed bridge
- Safe access to a bridge that is not prone to flooding
- Safe access to goods and services and public transport in rainy weather

Indirect impacts:

- Human health from communities downstream might be negatively affected.

Cumulative impacts:

- Increased chances of diseases relating to water contamination as the result of oil leaks into the

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road washed to the river.

Alternative S2 (if any)

Direct impacts:

Indirect impacts:

Cumulative impacts:

No-go alternative (compulsory)

Direct impacts:

- Degradation of receiving environment due to poor management and or care taken during construction and which affects the functionality or operation of the bridge
- The status quo remains and the community have to utilise an unsafe bridge.

Indirect impacts:

- Economic loss for applicants

Cumulative impacts:

- Exposure of human health to degraded environment especially communities that totally depends on very basic environment's resources
- Risks such as injuries that community especially school children might be exposed due improper rehabilitation especially along the banks of the river in the vicinity where the bridge begins from either side of the river bank.
- Lack of ongoing maintenance of the bridge and monitoring of rehabilitation of banks and degraded areas

Indicate mitigation measures to manage the potential impacts listed above:

Alternative S1

- Awareness campaign during construction by Environmental Control Officer of the site by raising awareness of the risk that the completed bridge might have.
- Monitoring the rehabilitated area to ensure that vegetation grows and the area rehabilitated is compact, and cannot any stage collapse.
- Stabilization of banks is carried out with soft engineering practices.
- Ongoing maintenance of the bridge to ensure it is safe

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:

- The layout and design must be complied with and the bridge managed and maintained on a regular basis

Indirect impacts:

- Not anticipated during this phase

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Cumulative impacts:

Not anticipated during this phase

Alternative A2

Direct impacts:

Indirect impacts:

Cumulative impacts:

No-go alternative (compulsory)

Direct impacts:

- Not anticipated during this phase

Indirect impacts:

- Not anticipated during this phase

Cumulative impacts:

- Not anticipated during this phase

Indicate mitigation measures to manage the potential impacts listed above:

Alternative A1

- Ongoing maintenance of the bridge to ensure that it is safe

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)

Direct impacts:

Closure or decommissioning is not envisaged however should this occur to the existing bridge, it will imply that it would not contribute to being a flood hazard and pedestrians will not be tempted to utilise this bridge and risk their lives during rainy weather

The closure of the proposed bridge would imply that road users would have limited or no access to the communities across or access to goods and services.

Indirect impacts:

The bridge will become in managed and maintained and an eyesore.

Should it be demolished it would create a significant amount of waste which may be unusable.

Cumulative impacts:

Socio economic advantages will be reduced with the decommissioning of the bridge.

Alternative S2

Direct impacts:

Indirect impacts:

Cumulative impacts:

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No-go alternative (compulsory)

Direct impacts:

Decommissioning of the proposed bridge will render the status quo and the norm and its associated disadvantages of poor public transport and access to goods and services.

Indirect impacts:

Not applicable

Cumulative impacts:

Not applicable

Indicate mitigation measures to manage the potential impacts listed above:

Alternative S1

1. To avoid soil and water contamination in cases where the machine being used are faulty, the contractor will have to make sure of the following:
 - a) Provision of drip trays all the time onsite
 - b) Placing of generators over the drip tray
2. Avoid soil erosion by ensuring that rehabilitation/landscaping in all areas where construction is taking place.
3. Provision of waste bins to avoid pollution by means of waste
4. Use of chemical ablation facilities to avoid air pollution

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 current negative impacts of a low level bridge being prone to flooding will continue. This will continue to be a hazard to road users.

Indirect impacts:

Development potential will be reduced

Cumulative impacts:

Socio economic status of community will remain the same

Alternative A2

Direct impacts:

Indirect impacts:

Cumulative impacts:

No-go alternative (compulsory)

Direct impacts:

Not Applicable

Indirect impacts:

Not Applicable

Cumulative impacts:

Not Applicable

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Indicate mitigation measures to manage the potential impacts listed above:

Alternative A1

Ensure new bridge is built and managed in an environmentally viable manner.

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)

- Develop Environmental Management Programme (EMPr)
- Appointment of Environmental Control Officer for the project
- ECO to review proposed project scope against Environmental Authorisation by DAEA

The following to be monitored by ECO during construction:

- Environmental scan of the site prior any excavations in preparation for construction
- Induction to all construction personnel on contents of EMPr and environmental authorisation and compliance and penalties associated there to.
- Advice the contractors areas suitable for contractor's temporal mobile site offices
- Advice on what to do with waste being produced on site by allowing such waste to be disposed of at a registered landfill sites
- Control of dust especially in areas that are in close proximity to residential areas
- Cleaning of spillages immediately'
- Demarcation of sites for no go areas
- Demarcation of construction sites and prevent public access to these areas
- Implement fines as part of the contract for unlawful activities
- Monitor complaints, investigate and implement rectifying measures
- Monitor areas for pollution and degradation.
- Rehabilitation of any damage to sensitive areas, including potential erosion from construction activities.
- Implement a process to capture and address public recommendations, complaints and or requests.
- Monthly audit report to be produced.

Alternative A1 (preferred alternative)

Alternative A2

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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)

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The community surrounding Ntinini river is in dire need of the bridge to assist them undertake their normal daily activities. At present (and as indicated) these communities find it hard to access other areas especially during and after heavy rains as the river are full of water and very difficult if not possible to cross the river.

Despite the environmental impacts as indicated in this report, the proposed vehicle bridge is necessary and from the socio-economic point of view it is needed that the authorisation be granted by department of agriculture and environmental affairs to the department of transport to start the construction process.

However, the proposed development will have a minimal impact on the environment as pointed out above. This impacts include:

- 1) Water contamination with oils
- 2) Soil contamination with oils
- 3) Dangers on the living species within the river system
- 4) River system characteristics and associated degradation

These impacts are vital if left unattended. It therefore requires that strong and strict measures need to be in place to avoid this from happening. In doing this there will be a need to ensure that the contractor understands fully the impacts that might affect the receiving environment and the impact these might have especially on the river that carries possible other living organisms.

The application of strict environmental principles in ensuring safe keeping of the environment is vital and adherence to the approved EMPr

Alternative S2

Alternative A1 (preferred alternative)

The approval of the proposed development as proposed by Department of Transport is of vital importance for the socio-economic status of the communities surrounding the Ntinini river. Despite the environmental impacts potential onsite during construction phase, the approval of this proposed development is of vital importance in improving the lives of the communities' especially young school kids crossing the river.

Alternative A2

No-go alternative (compulsory)

The disapproval of this proposed development will not only affect the department's target of service delivery but will affect economically and socially the lives of the communities within this area. The loss of lives will increase during flood periods and access to goods and services in an effort for a better standard of living will be diminished.

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

YES

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report?

If "NO", please contact the KZN Department of Agriculture & Environmental Affairs regarding the further requirements for your report.

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:

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SECTION G: APPENDIXES

The following appendixes must be attached as appropriate:

Appendix A: Site plan(s)

Appendix B: Photographs

Appendix C: Facility illustration(s)

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Appendix D: Specialist reports

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Appendix E: Comments and responses report

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Appendix F: Draft Environmental Management Programme (EMPr)

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Appendix G: Other information