



**DRAFT BASIC ASSESSMENT REPORT
(DBAR) FOR THE PROPOSED
CONSTRUCTION OF THE EZINGADENI
LOW LEVEL BRIDGE, ZULULAND DISTRICT
MUNICIPALITY**

EDTEA REF: DC26/0002/2018
March 2018

Prepared for:	Prepared by:
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Report Status: draft

Document Details:

Name of Document	Draft Basic Assessment Report: Construction of Ezingadeni Low Level Bridge, Zululand District Municipality
Environmental Assessment Practitioner Details	
EAP Company Name	SA Sheq Consultants
Consultant managing the Application	Jenitha Girdary
Contact Details	Email: jenitha@fuzeenvironmental.co.za Cell: 0820831691
Qualifications and Experience	BA Geography Jenitha has been employed in the environmental management sector since 2007. Her 10 years of work experience extends to undertaking Environmental impact assessments, Basic assessments, compiling EMPs, undertaking site visits and field work, permits applications, ECO work, environmental law, legal screenings, co-operative governance, public participation, rehabilitation project management, quality management, and financial management.
Signature	
Proponent Details	
Applicant name	Abaqulusi Local Municipality
Representative	B.E. Ntanza
Contact Details	Tel: 034 982 2133 Fax: 034 9809 637 Address: 112 Mason Street, Vryheid

Comment Period for the draft Basic assessment report and WULA application:

This draft basic assessment report is subject to review comment within a 30-day period. Comments on the draft basic assessment report are also to be valid for the water use license application.

Comments are due by the 7 May 2018 at the latest, following which the final BAR will be submitted to the DEDTEA for approval. No extensions to the deadline will be given due to the construction implementation period.



environmental affairs

Department:
Environmental Affairs
REPUBLIC OF SOUTH AFRICA

(For official use only)

File Reference Number:

Application Number:

Date Received:

Basic assessment report in terms of the Environmental Impact Assessment Regulations, 2014, promulgated in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998), as amended.

Kindly note that:

1. This **basic assessment report** is a standard report that may be required by a competent authority in terms of the EIA Regulations, 2014 and is meant to streamline applications. Please make sure that it is the report used by the particular competent authority for the activity that is being applied for.
2. This report format is current as of **08 December 2014**. It is the responsibility of the applicant to ascertain whether subsequent versions of the form have been published or produced by the competent authority
3. The report must be typed within the spaces provided in the form. The size of the spaces provided is not necessarily 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 typing.
4. Where applicable **tick** the boxes that are applicable in the report.
5. An incomplete report may be returned to the applicant for revision.
6. 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 may result in the rejection of the application as provided for in the regulations.
7. This report must be handed in at offices of the relevant competent authority as determined by each authority.
8. No faxed or e-mailed reports will be accepted.
9. The signature of the EAP on the report must be an original signature.
10. The report must be compiled by an independent environmental assessment practitioner.
11. 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.
12. A competent authority may require that for specified types of activities in defined situations only parts of this report need to be completed.
13. Should a specialist report or report on a specialised process be submitted at any stage for any part of this application, the terms of reference for such report must also be submitted.
14. Two (2) colour hard copies and one (1) electronic copy of the report must be submitted to the competent authority.
15. Shape files (.shp) for maps must be included in the electronic copy of the report submitted to the competent authority.

SECTION A: ACTIVITY INFORMATION

Has a specialist been consulted to assist with the completion of this section?

<input type="checkbox"/>	NO
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If YES, please complete the form entitled "Details of specialist and declaration of interest" for the specialist appointed and attach in Appendix I.

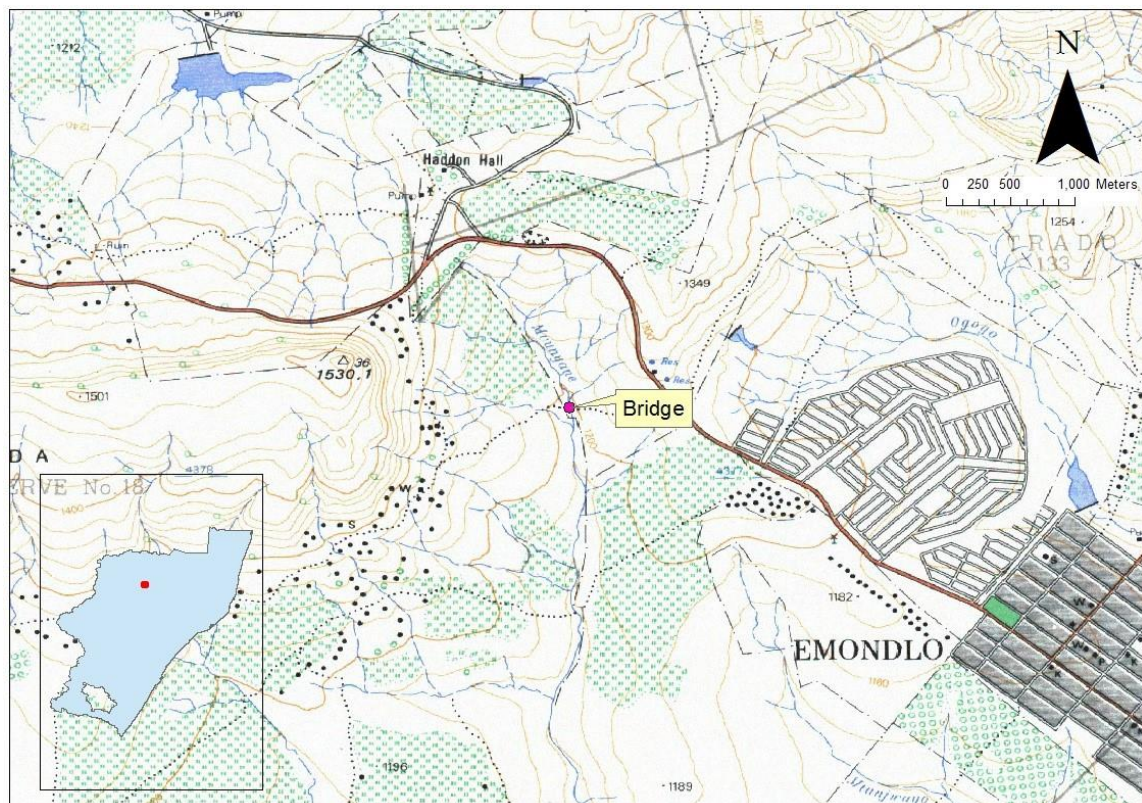
1. PROJECT DESCRIPTION

a) Describe the project associated with the listed activities applied for

The Abaqulusi Local Municipality proposes to construct the Ezingadeni Low Level bridge, over Mvunyana river. This project is located within ward 20 of Mondlo settlement, governed by Zululand District municipality.

The proposed bridge is a new structure. Excavations for construction will be undertaken at the site and within the watercourse specifically. It is possible that a temporary crossing will be constructed at the site to allow for vehicular and pedestrian crossing.

Bridge dimensions: 8.20m (L) X 6.10m (W) X 2.20m (H)



Locality showing bridge site



Image: Bridge site



Image: Bridge site

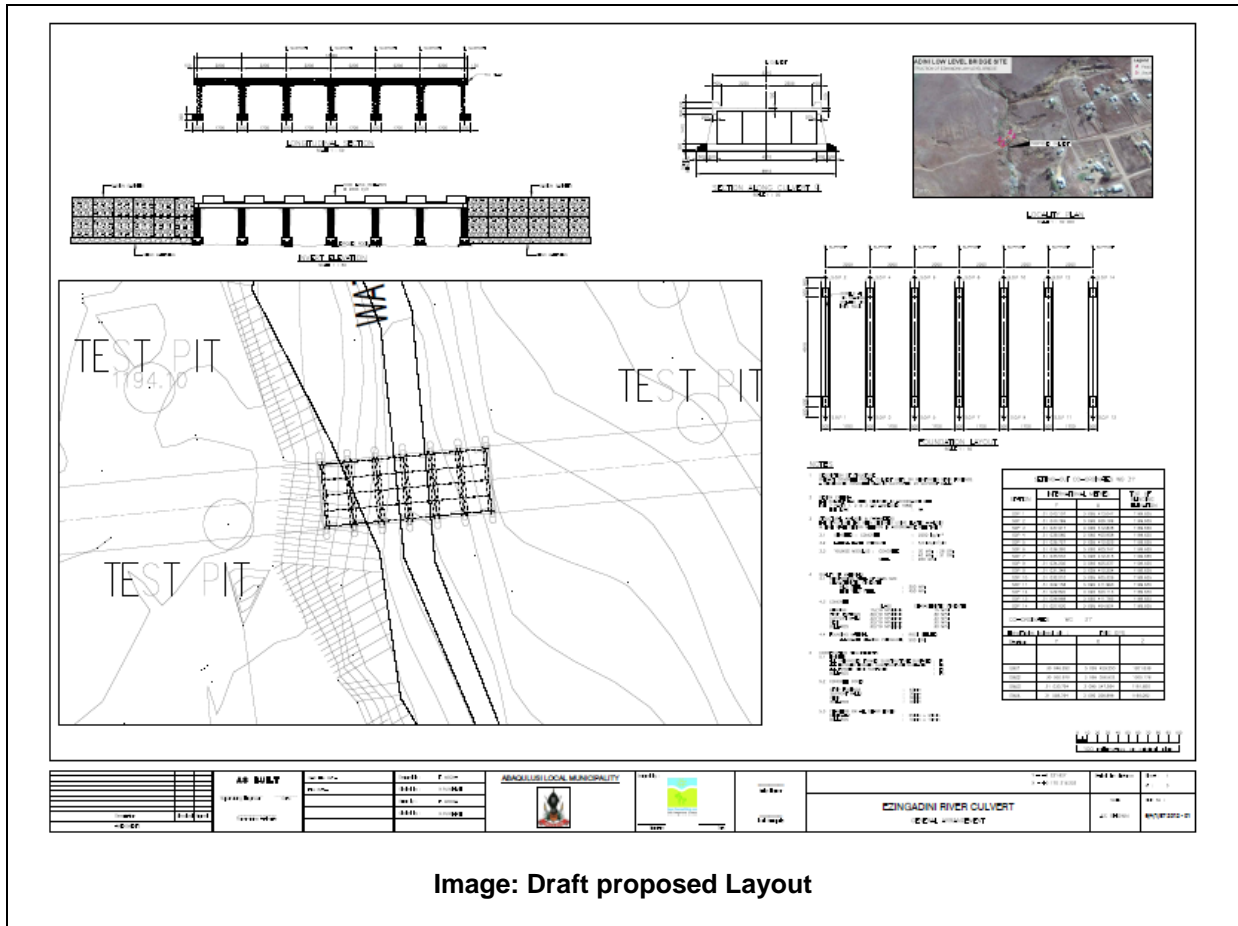


Image: Draft proposed Layout

b) Provide a detailed description of the listed activities associated with the project as applied for

Listed activity as described in GN 327, 325 and 324	Description of project activity
<p>GN 327: Listing Notice 1</p> <p>Activity 12 (ii) Infrastructure or structures with a physical footprint of 100 square metres or more;</p> <p>(a) within a watercourse;</p> <p>(c) where such development occurs within a watercourse or within 32m of a watercourse.</p>	<p>The project comprises the construction of a low-level bridge within the Mvunyane river. It is possible that the section of track leading to the watercourse (bridge site) will be temporarily improved to allow for movement of construction vehicles.</p>
<p>GN 327: Listing Notice 1 activity 19: The infilling or depositing of any material of more than 10 cubic metres into, or the dredging, excavation, removal or moving of soil, sand, shells, shell grit, pebbles or rock of more than 10 cubic metres from a watercourse.</p>	<p>To allow for construction and foundations, it will be necessary to excavate within the river bed and banks. This comprises removing and infilling material in the watercourse. There is a possibility for placement of temporary crossing to enable vehicular movement across the river. It is possible that the section of track leading to the watercourse (bridge site) will be temporarily improved to allow for movement of construction vehicles.</p>
<p>GN324: Listing Notice 3 activity 19</p>	<p>The project site is listed as an ESA, due to its proximity to a CBA Optimal area which is located to the north east of the project area. It is possible that the section of track leading to</p>

	the watercourse (bridge site) will be temporally improved to allow for movement of construction vehicles.
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2. 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 application as required by Appendix 1 (3)(h), Regulation 2014. Alternatives should include a consideration of all possible means by which the purpose and need of the proposed activity (NOT PROJECT) 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.

The identification of alternatives should be in line with the Integrated Environmental Assessment Guideline Series 11, published by the DEA in 2004. Should the alternatives include different locations and lay-outs, the co-ordinates of the different alternatives must be provided. The co-ordinates should be in degrees, minutes and seconds. The projection that must be used in all cases is the WGS84 spheroid in a national or local projection.

a) Site alternatives

BRIDGE SITE

Alternative 1 (preferred alternative)		
Description	Lat (DDMMSS)	Long (DDMMSS)
The proposed site is located within a grassland area, at Mondlo, over Mvunyane river. There is an existing track (extending off a gravel access road leading to the settlement flanking the site) used by the community for accessing and crossing the river and cattle grazing; this track resumes on the opposite bank of the stream and informally links the Mondlo and Nkande settlements. Further disturbances in the form of diversion canals, erosion gullies and evidence of cattle grazing were noted in the immediate vicinity of the site, as well as erosion and scour within the channel itself.	27 58 19.83 S	30 41 04.44 E

<p>The site is characterised by a watercourse, with a wetland on the north-western bank. Site is located within the W21D catchment (Mfolozi catchment).</p> <p><u>Negatives of site:</u> -Located within CBA Optimal/Ecological Support area, NFEPA and fish support area -Located within upper reach of river with good water quality -wetlands on western bank offering important ecological services -Limited invasive species invasion</p> <p><u>Positives of site:</u> -Located within existing access point / track -Disturbed by settlement especially on eastern side -Erosion, scour noted, as well as disturbances via cattle and agriculture</p>		
Alternative 2		
Description	Lat (DDMMSS)	Long (DDMMSS)
There is no alternative site as the site has been chosen due to the existing river access point, the gravel access road tapering to a track leading to the site (note that both this gravel access road and track will be upgraded subject to a different contract), and community requirements for the bridge at this point. The site also links the settlements of Mondlo and Nkande.		
Alternative 3		
Description	Lat (DDMMSS)	Long (DDMMSS)
n/a		

In the case of linear activities: **See above**

Alternative:

Alternative S1 (preferred)

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

Latitude (S):

Longitude (E):

For route alternatives that are longer than 500m, please provide an addendum with co-ordinates taken every 250 meters along the route for each alternative alignment.

In the case of an area being under application, please provide the co-ordinates of the corners of the site as indicated on the lay-out map provided in Appendix A of this form.

b) Lay-out alternatives

Alternative 1 (preferred alternative)		
Description	Lat (DDMMSS)	Long (DDMMSS)
The preferred layout is that described above in this application, being a low-level bridge. The specialist recommendations must however be implemented during design finalisation and construction.		
Alternative 2		
Description	Lat (DDMMSS)	Long (DDMMSS)
<i>The option of constructing a full bridge was considered, but due to the flood levels and stream profiles the expense</i>		

<i>of constructing a full bridge, the anticipated volume of traffic and funds available, this was considered economically unfeasible at this stage</i>		
Alternative 3		
Description	Lat (DDMMSS)	Long (DDMMSS)
N/A		

c) Technology alternatives

Alternative 1 (preferred alternative)		
Labour intensive methods will be employed; technology alternatives have not been considered. Large scale machinery will enable the construction to proceed at a quicker and easier pace, but will facilitate far fewer employment opportunities. The use of standard machinery and manual labour is therefore preferable.		
Alternative 2		
n/a		
Alternative 3		
n/a		

d) Other alternatives (e.g. scheduling, demand, input, scale and design alternatives)

Alternative 1 (preferred alternative)		
In terms of input alternatives, the bridge will be constructed using reinforced steel and concrete. No other alternatives are available at this stage. Design alternatives are considered as per layout alternatives		
Alternative 2		
n/a		
Alternative 3		
n/a		

e) No-go alternative

The project is required to provide transit over the watercourse for both vehicles and pedestrians. This will improve access to medical and healthcare, shorten travel time to schools and neighbouring settlements and serve as a marginal response to climate change. In addition, informal track will be formalised in future (part of a separate contract) thus the bridge crossing is important.

Should the bridge not be constructed, then the current status quo will remain.

Paragraphs 3 – 13 below should be completed for each alternative.

3. PHYSICAL SIZE OF THE ACTIVITY

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

Alternative: n/a

Alternative A1¹ (preferred activity alternative)

Size of the activity:

m²

¹ "Alternative A.." refer to activity, process, technology or other alternatives.

Alternative A2 (if any)
Alternative A3 (if any)

	m ²
	m ²

or, for linear activities:

Alternative:

Length of the activity:

- **28° 37' 30.28" S; 31° 56' 25.32" E**
Dimensions: 8.20m (L) X 6.10m (W) X 2.20m (H)

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

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

Alternative:

Size of the site/servitude:

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

	m ²
	m ²
	m ²

4. SITE ACCESS

Does ready access to the site exist?

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

X YES	<input checked="" type="checkbox"/>	
		N/A m

Describe the type of access road planned:

No new access is planned for this construction, since access is via a gravel route for majority of the area. The existing gravel track will be used, however, it is expected that a small section of temporary, improved gravel track will be created leading to the river, approximately 40m in length to ensure safety of the construction vehicles.

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.

5. LOCALITY MAP

LOCALITY MAP IS ATTACHED AS APPENDIX A

An A3 locality map must be attached to the back of this document, as Appendix A. The scale of the locality map must be relevant to the size of the development (at least 1:50 000. For linear activities of more than 25 kilometres, a smaller scale e.g. 1:250 000 can be used. The scale must be indicated on the map.). The map must indicate the following:

- an accurate indication of the project site position as well as the positions of the alternative sites, if any;
- indication of all the alternatives identified;
- closest town(s);
- road access from all major roads in the area;

- road names or numbers of all major roads as well as the roads that provide access to the site(s);
- all roads within a 1km radius of the site or alternative sites; and
- a north arrow;
- a legend; and
- locality GPS co-ordinates (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 and decimal minutes. The minutes should have at least three decimals to ensure adequate accuracy. The projection that must be used in all cases is the WGS84 spheroid in a national or local projection).

6. LAYOUT/ROUTE PLAN

LOCALITY MAP/LAYOUT PLAN IS ATTACHED AS APPENDIX A

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 document.

The site or route plans must indicate the following:

- the property boundaries and numbers of all the properties within 50 metres of the site;
- the current land use as well as the land use zoning of the site;
- the current land use as well as the land use zoning each of the properties adjoining the site or sites;
- the exact position of each listed activity applied for (including alternatives);
- servitude(s) indicating the purpose of the servitude;
- a legend; and
- a north arrow.

7. SENSITIVITY MAP

ATTACHED AS APPENDIX A AND APPENDIX E AS PER SPECIALIST STUDY

The layout/route plan as indicated above must be overlain with a sensitivity map that indicates all the sensitive areas associated with the site, including, but not limited to:

- watercourses;
- the 1:100 year flood line (where available or where it is required by DWS);
- ridges;
- cultural and historical features;
- areas with indigenous vegetation (even if it is degraded or infested with alien species); and
- critical biodiversity areas.

The sensitivity map must also cover areas within 100m of the site and must be attached in Appendix A.

8. SITE PHOTOGRAPHS

PHOTOS ARE ATTACHED AS APPENDIX B

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.

9. FACILITY ILLUSTRATION

THE LAYOUT/DESIGN PLAN WILL SERVE AS THE FACILITY ILLUSTRATION

A detailed illustration of the activity must be provided at a scale of at least 1:200 as Appendix C for activities that include structures. The illustrations must be to scale and must represent a realistic image of the planned activity. The illustration must give a representative view of the activity.

10. ACTIVITY MOTIVATION

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

1. Is the activity permitted in terms of the property's existing land use rights?	YES	<input checked="" type="checkbox"/>	Please explain
The existing land use rights will permit the construction of the crossing, this is a tribal area and the community require the crossing. There is an existing track that leads to the site off a gravel access, both of these will be upgraded in future.			
2. Will the activity be in line with the following?			
(a) Provincial Spatial Development Framework (PSDF)	YES	<input checked="" type="checkbox"/>	Please explain
This is an infrastructure (bridge) project, thus it can be considered to be part of the psdf, by virtue of increasing commutability, safety and improving road network. A good road network is important for socio-economic growth.			
(b) Urban edge / Edge of Built environment for the area	YES	<input checked="" type="checkbox"/>	Please explain
The activity is located at the edge of the Mondlo settlement which transitions to rural.			
(c) Integrated Development Plan (IDP) and Spatial Development Framework (SDF) of the Local Municipality (e.g. would the approval of this application compromise the integrity of the existing approved and credible municipal IDP and SDF?).	YES	<input checked="" type="checkbox"/>	Please explain
In terms of the IDP, vulnerability to disasters such as floods are prevalent. The approval of the application will thus not compromise the IDP, but assist in contributing to the solution of the above challenge. Construction of causeways (bridge and culverts) is noted in the IDP as a KPA, as is improvement and expanding of the road infrastructure.			
(d) Approved Structure Plan of the Municipality	YES	<input checked="" type="checkbox"/>	Please explain
The structure plan identifies bridge construction as medium-term goal so this bridge is thus in line with the plan.			
(e) An Environmental Management Framework (EMF) adopted by the Department (e.g. Would the approval of this application compromise the integrity of the existing environmental management priorities for the area and if so, can it be justified in terms of sustainability considerations?)	<input checked="" type="checkbox"/>	NO	Please explain
The construction of the bridge will not impact on the conservation priorities but only if the structure is well designed, limited to disturbed track/crossing point, and if management measures are implemented.			
(f) Any other Plans (e.g. Guide Plan)	YES	NO	Please explain
n/a			

3. Is the land use (associated with the activity being applied for) considered within the timeframe intended by the existing approved SDF agreed to by the relevant environmental authority (i.e. is the proposed development in line with the projects and programmes identified as priorities within the credible IDP)?	YES	<input checked="" type="checkbox"/>	Please explain
Construction of causeways is noted in the IDP as a KPA, as is improvement and expanding of the road infrastructure.			
4. Does the community/area need the activity and the associated land use concerned (is it a societal priority)? (This refers to the strategic as well as local level (e.g. development is a national priority, but within a specific local context it could be inappropriate.)	YES	<input checked="" type="checkbox"/>	Please explain
The local community needs this bridge, on a local scale. The construction falls in line with both national (national development plan) and local priorities (IDP), in terms of job creation, infrastructure development and access to services and climate concerns			
5. Are the necessary services with adequate capacity currently available (at the time of application), or must additional capacity be created to cater for the development? (Confirmation by the relevant Municipality in this regard must be attached to the final Basic Assessment Report as Appendix I.)	YES	NO	Please explain
Since this is a bridge project, no capacity requirements are effected.			
6. Is this development provided for in the infrastructure planning of the municipality, and if not what will the implication be on the infrastructure planning of the municipality (priority and placement of services and opportunity costs)? (Comment by the relevant Municipality in this regard must be attached to the final Basic Assessment Report as Appendix I.)	YES	<input checked="" type="checkbox"/>	Please explain
This project has been financially budgeted for by the applicant.			
7. Is this project part of a national programme to address an issue of national concern or importance?	<input checked="" type="checkbox"/>	NO	Please explain
This is a local bridge project, but will not address an issue of national importance or concern. However, the NDP identifies road infrastructure as a priority.			
8. Do location factors favour this land use (associated with the activity applied for) at this place? (This relates to the contextualisation of the proposed land use on this site within its broader context.)	YES	<input checked="" type="checkbox"/>	Please explain
In context. The bridge site is positioned to serve as improved access to neighbouring areas and services.			
9. Is the development the best practicable environmental option for this land/site?	YES	<input checked="" type="checkbox"/>	Please explain
In terms of social benefits, it is the best option.			
10. Will the benefits of the proposed land use/development outweigh the negative impacts of it?	YES	<input checked="" type="checkbox"/>	Please explain
The positive benefits will outweigh the negative impacts in the socio-economic sense in that that it will improve commutability during high rainfall events; improve road network, but the design of the structure must be adequate and incorporate erosion.			
11. Will the proposed land use/development set a precedent for similar activities in the area (local municipality)?	<input checked="" type="checkbox"/>	NO	Please explain
There are other structures in the area, so a precedent had since already been set.			

12. Will any person's rights be negatively affected by the proposed activity/ies?	<input type="checkbox"/>	NO	Please explain
The bridge will enhance community rights once constructed. However during construction continuous engagement with the community is vital.			
13. Will the proposed activity/ies compromise the "urban edge" as defined by the local municipality?	<input type="checkbox"/>	NO	Please explain
The activity is not located in the urban edge.			
14. Will the proposed activity/ies contribute to any of the 17 Strategic Integrated Projects (SIPS)?	YES	<input type="checkbox"/>	Please explain
This project may possibly fall within the SIP6			
15. What will the benefits be to society in general and to the local communities?			Please explain
The bridge will allow improved mobility amongst adjoining areas. The local community will benefit directly from the improved infrastructure, access to schools, healthcare and other services and the neighbouring settlement, and much needed temporary job creation.			
16. Any other need and desirability considerations related to the proposed activity?			Please explain
The community stated that they required a crossing at the location. Thus improved mobility and connectedness will accrue to the community. Temporary jobs will be created during construction, using local labour and principles of gender equity.			
17. How does the project fit into the National Development Plan for 2030?			Please explain
The NDP 2030 requires citizens to have access to social equity. Thus a good road network will contribute to this by enabling improved mobility and easier service provision and delivery of key services such as healthcare and housing.			
18. Please describe how the general objectives of Integrated Environmental Management as set out in section 23 of NEMA have been taken into account.			
NEMA S23 general objectives have been considered as below:			
<ul style="list-style-type: none"> ▪ The affected community leaders, the general public, authorities and state departments have been engaged and consulted with in the BA process from the onset ▪ Potential environmental, cultural and socio-economic risks and impacts have been assessed and assigned significance ratings. ▪ Lodging of an application for environmental authorisation as required ▪ The 'Duty of Care' principle is incorporated into the EMPr. ▪ Mitigation measures incorporated into the EMPr for all potential impacts 			

19. Please describe how the principles of environmental management as set out in section 2 of NEMA have been taken into account.

As per no.18 above:

- The affected community leaders, the general public, authorities and state departments have been engaged and consulted with in the BA process from the onset
- Potential environmental, cultural and socio-economic risks and impacts have been assessed and assigned significance ratings.
- Lodging of an application for environmental authorisation as required
- The 'polluter pays' principle is incorporated into the EMP, and S24 Nema.
- Mitigation measures incorporated into the EMP for all potential impacts

11. APPLICABLE LEGISLATION, POLICIES AND/OR GUIDELINES

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

Title of legislation, policy or guideline	Applicability to the project	Administering authority	Date
National Environmental Management Act (No 107 Of 1998; as amended)	The eia regulations are under nema and give rise to the need for an eia for specific projects. The listed activities under here are subject to eia.	Provincial and national	1998
EIA regulations of 2014	Listed activities herein are triggered	National and provincial	2014
NEMA: Biodiversity Act (10 of 2004)	Protection of any chance biodiversity features, permitting requirements.	Provincial and national	1998
National Water Act (No 36 of 1998)	Protection of watercourses and permit requirements before working in/near watercourses	Provincial and national	1998
National Heritage Resources Act (Act 25 of 1999)	Should archaeological artefacts be uncovered accidentally, then the contractor must stop work and inform amafa, so that these may be preserved.	Provincial and national	1999
NEMA : Waste Act (Act 59 of 2008 as amended)	Safe and correct, legal disposal of waste generated on site, by the generator of waste.	Provincial and national	2008
Conservation of Agricultural Resources Act (Act 43 of 1983)	the project must implement erosion controls to stabilize soil.	Provincial and national	1983
Hazardous Substances Act (Act 15 of 1973)	The contractor may be storing chemicals and fuel on site.	National and provincial	1973
National Spatial Biodiversity Assessment (2011)	This assessment hopes to inform all private and public sector activities and provides tools for use in planning	National (Sanbi)	2011

EMF and SDF for Zululand	All projects to be guided by these documents.	Local	2015
All local and provincial regulations and by municipality by laws	The contract must identify, consider and adhere to all relevant laws (possibly via a legal register)	Local and provincial	current
Construction Regulations	The contractor will build according to these laws	Provincial and national	2015
Occupational Health and Safety Act	The contractor will comply with all requirements of the OHSACT.	Provincial and national	1993

12. WASTE, EFFLUENT, EMISSION AND NOISE MANAGEMENT

a) Solid waste management

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

YES	<input checked="" type="checkbox"/>
80 m ³	

If YES, what estimated quantity will be produced per month?

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

Solid construction waste will be disposed by means of plant. Plant includes tipper trucks as well as TLB/excavator. All natural waste material (soil, rock) will be used as backfill where feasible.

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

The solid construction waste will be disposed at approved (legal) sites preferably land fill sites. Waste will be reused on site where possible.

Will the activity produce solid waste during its operational phase?

<input checked="" type="checkbox"/>	NO
m ³	

If YES, what estimated quantity will be produced per month?

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

No solid waste is anticipated during the operational phase

If the solid waste will be disposed of into a municipal waste stream, indicate which registered landfill site will be used.

Solid waste will be disposed at a registered landfill, details of nearest registered landfill is currently not available.

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

Solid waste (from construction activity) will be disposed at the nearest registered landfill, reused on site where possible.

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 whether it is necessary to change to an application for scoping and EIA.

Can any part of the solid waste be classified as hazardous in terms of the NEM:WA?

<input checked="" type="checkbox"/>	NO
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If YES, inform the competent authority and request a change to an application for scoping and EIA. An application for a waste permit in terms of the NEM:WA must also be submitted with this application.

Is the activity that is being applied for a solid waste handling or treatment facility? NO

If YES, then the applicant should consult with the competent authority to determine whether it is necessary to change to an application for scoping and EIA. An application for a waste permit in terms of the NEM:WA must also be submitted with this application.

b) Liquid effluent

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

Will the activity produce effluent that will be treated and/or disposed of at another facility? NO

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:

c) Emissions into the atmosphere

Will the activity release emissions into the atmosphere other than exhaust emissions and dust associated with construction phase activities? YES

If YES, is it controlled by any legislation of any sphere of government? NO

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

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

During construction, CO₂ emissions from construction vehicles will occur. Dust entrainment from construction vehicles and activities will also occur. The concentration will be low-moderate, and will be temporary and limited to the construction work area, for the duration of the construction phase.

d) Waste permit

Will any aspect of the activity produce waste that will require a waste permit in terms of the NEM:WA? NO

If YES, please submit evidence that an application for a waste permit has been submitted to the competent authority

e) Generation of noise

Will the activity generate noise? YES

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

<input type="checkbox"/>	NO
--------------------------	----

Describe the noise in terms of type and level:

Low level noise will result from construction vehicles and machinery and is not expected to exceed the occupational health and safety levels. Noise generated at the site as a result of construction activity will be temporary.

13. WATER USE

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

<input checked="" type="checkbox"/> Municipal	<input type="checkbox"/> Water board	<input type="checkbox"/> Groundwater	<input type="checkbox"/> River, stream, dam or lake	<input type="checkbox"/> Other	<input type="checkbox"/> The activity will not use water
--	--------------------------------------	--------------------------------------	---	--------------------------------	--

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:

Does the activity require a water use authorisation (general authorisation or water use licence) from the Department of Water Affairs? **An application for a water use licence (GA) will be submitted once the EA is received.**

litres	
<input checked="" type="checkbox"/> YES	<input type="checkbox"/>

If YES, please provide proof that the application has been submitted to the Department of Water Affairs.

14. ENERGY EFFICIENCY

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

The activity involves the construction of a bridge, so in terms of design, energy efficiency is not required. During construction, generators can be used as an energy source. Further, construction will be confined to daylight hours to reduce the need for night time lighting.

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

Construction will be confined to daylight hours and generators will be used where feasible to serve as an energy source.

SECTION B: 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 B and indicate the area, which is covered by each copy No. on the Site Plan.

Section B Copy No. (e.g. A): 1

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

3. Has a specialist been consulted to assist with the completion of this section? NO

If YES, please complete the form entitled "Details of specialist and declaration of interest" for each specialist thus appointed and attach it in Appendix I. All specialist reports must be contained in Appendix D.

Property description/physical address:

Province	KwaZulu-Natal
District Municipality	Zululand District Municipality
Local Municipality	Abaqulusi Local Municipality
Ward Number(s)	20
Farm name and number	n/a
Portion number	n/a
SG Code	n/a

Where a large number of properties are involved (e.g. linear activities), please attach a full list to this application including the same information as indicated above.

Current land-use zoning as per local municipality IDP/records:

The site is zoned as open space/river

In instances where there is more than one current land-use zoning, please attach a list of current land use zonings that also indicate which portions each use pertains to, to this application.

Is a change of land-use or a consent use application required? YES

1. GRADIENT OF THE SITE

Indicate the general gradient of the site.

Alternative S1:

Flat	1:50 – 1:20	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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Alternative S2 (if any): N/A

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): N/A

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:

2.1 Ridgeline	<input type="checkbox"/>	2.4 Closed valley	<input type="checkbox"/>	2.7 Undulating plain/ low hills	<input checked="" type="checkbox"/>
2.2 Plateau	<input type="checkbox"/>	2.5 Open valley	<input checked="" type="checkbox"/>	2.8 Dune	<input type="checkbox"/>
2.3 Side slope of hill/mountain	<input type="checkbox"/>	2.6 Plain	<input type="checkbox"/>	2.9 Seafront	<input type="checkbox"/>
2.10 At sea	<input type="checkbox"/>				

3. GROUNDWATER, SOIL AND GEOLOGICAL STABILITY OF THE SITE

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

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

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.

GEOTECHNICAL ASPECTS:

A geotechnical report is attached as appendix D. According to the study, the site formation is within the Eccca Group of the Karoo Supergroup (Karoo Basin). Eccca shale is typically dark-coloured as they are carbon rich due to the high vegetation content of the original sediments. Fine bedding or laminations may also be noted, and the shales tend to easily crumble. Overlying the shale is a thick sequence dominated by light grey sandstones, called the Vryheid Formation.

Three Trial pits were excavated on the existing grass surfaced area to an average final depth of 2,2m before reaching hard surface. The side walls of the trial pits 1 & 2 were excavated vertically and there was evidence of potential collapse within these sidewalls during the logging process of concern, only trial pit 3 showed no evidence of potential collapse. This indicated that the material encountered on trial pit 3 was of finer stable material.

In terms of SANS 1200DA

“Soft Excavation” shall be excavation in material that can be efficiently removed and loaded without prior ripping.

“Intermediate Excavation” shall be excavation (excluding soft excavation) in material that can be efficiently ripped.

“Hard Rock” excavation shall be in material that cannot be efficiently removed without blasting or without wedging and splitting before removal.

Trial Pit No.1 indicated that Soft excavations can be expected from the depth of 0mm – 2550mm (Soft to Intermediate material as DCP results).

Trial Pit No.2 indicated that Soft excavations can be expected from the depth of 0mm – 1300mm (Soft to hard material as per DCP results).

Trial Pit No. 3 indicated that Intermediate excavations can be expected from the depth of 0mm-2900 (Intermediate material to hard).

There is a shallow river stream characterised by slow movement of water. At the time of the investigation, groundwater seepage was encountered in Trial Pits 1 and 2.









Two trial pits were excavated on the left-hand side and one trial pit on the right hand side of the stream. The site consists of a solid dark greyish dolerite rock bed at an average depth 2m.

Having investigated the Trail Pits and classified the material according to the TRH14 Manual through laboratory testing, the site class ranges on Site Class C1. This is due to the clayey, sandy soils encountered that showed to have a low to moderate plasticity reading of the founding layers. The founding material can be characterised as compressible and potentially collapsible soil.

In summary the proposed site rest on a rock bed situated at an average depth of 2.0m depth and thus founding level can be found at 2.0m depth

4. GROUNDCOVER

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

	Natural veld with scattered aliens ^E			
				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.

Refer to specialist report attached as Appendix D, and summarized in section 9.

5. SURFACE WATER

Indicate the surface water present on and or adjacent to the site and alternative sites?

Perennial River		NO	UNSURE
Non-Perennial River	YES		UNSURE
Permanent Wetland		NO	UNSURE
Seasonal Wetland	YES		UNSURE
Artificial Wetland	YES		UNSURE
Estuarine / Lagoonal wetland		NO	UNSURE

If any of the boxes marked YES or UNSURE is ticked, please provide a description of the relevant watercourse.

A wetland and riparian assessment for the affected Mvunyane River site section is attached as Appendix D.

The proposed Ezingadini vehicular bridge crossing is situated on the upper Mvunyane River, a tributary of the White Mfolozi River. The upper reaches of the Mvunyane River are characterised by a narrow, incised active channel, a graminoid dominated riparian zone and occasional erosion features. Flow is seasonal, which influences the nature and diversity of the aquatic habitat and fauna. The diversity of both the ichthyofaunal and invertebrate community was low, however this is attributed to a recent extended dry/no flow period. The affected section does however, provide suitable habitat for the spawning of *E. anoplus*, -a number of these fish were captured during the site visit.

Adjacent to the proposed crossing site, an unchannelled valley bottom wetland was identified. The wetland unit is characterised by temporary wetland conditions and was dominated by grass species. The system is fed by a small watercourse and was found to provide valuable ecoservices, particularly those associated with flow management and sediment control.

A summary of functionality and PES results for the identified wetland unit:

HGM unit	System	Functionality	PES/Health	EIS
1	1	Moderately high	C	Moderate

A summary of the findings of the aquatic assessment for the affected section of the Mvunyane River.

	EC
Invertebrates	D
Ichthyofauna	E
Water quality	B*
Riparian vegetation (R 2)	C
Overall PES	B# (D^)
EIS	Moderate

**based on observations*

#Derived PES for the reach within the study area

^DWS Desktop PES for the entire reach

Identified impacts varied in terms of significance from LOW to HIGH before mitigation. After mitigation it was assumed that the majority of impacts would be reduced to a LOW level, with the exception of habitat loss and disturbance associated with the proposed bridge crossing.

6. LAND USE CHARACTER OF SURROUNDING AREA

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

X Natural area The site is located over a watercourse, within a grassland area	Dam or reservoir	Polo fields
X Low density residential Houses were noted in the immediate vicinity of the watercourse. These will be impact on via noise, dust emissions, safety and security issues	Hospital/medical centre	Filling station ^H
X Medium density residential Houses were noted in the vicinity of the watercourse. These will be impact on via noise, dust emissions, safety and security issues	School	Landfill or waste treatment site
High density residential	Tertiary education facility	Plantation
Informal residential ^A	Church	X Agriculture Site is used for ad hoc cattle grazing and pose safety issues. Subsistence agriculture is also noted
Retail commercial & warehousing	Old age home	X River, stream or wetland The bridge will be built across the river so the impacts of construction will be direct viz, excavation, foundations, formwork, construction on bank etc. The application is to conduct work in the river. Impacts on the watercourse are as per assessment, section D, below.
Light industrial	Sewage treatment plant ^A	Nature conservation area
Medium industrial ^{AN}	Train station or shunting yard ^N	Mountain, koppie or ridge
Heavy industrial ^{AN}	Railway line ^N	Museum
Power station	Major road (4 lanes or more) ^N	Historical building
Office/consulting room	Airport ^N	Protected Area
Military or police base/station/compound	Harbour	Graveyard
Spoil heap or slimes dam ^A	Sport facilities	Archaeological site
Quarry, sand or borrow pit	Golf course	Other land uses (describe)

If any of the boxes marked with an "N" are ticked, how will this impact / be impacted upon by the proposed activity? Specify and explain:

N/A

If any of the boxes marked with an "An" are ticked, how will this impact / be impacted upon by the proposed activity? Specify and explain:

N/A

If any of the boxes marked with an "H" are ticked, how will this impact / be impacted upon by the proposed activity? Specify and explain:

N/A

Does the proposed site (including any alternative sites) fall within any of the following:

Critical Biodiversity Area (as per provincial conservation plan)	YES	<input type="checkbox"/>
Core area of a protected area?	<input type="checkbox"/>	NO
Buffer area of a protected area?	<input type="checkbox"/>	NO
Planned expansion area of an existing protected area?	<input type="checkbox"/>	NO
Existing offset area associated with a previous Environmental Authorisation?	<input type="checkbox"/>	NO
Buffer area of the SKA?	<input type="checkbox"/>	NO

If the answer to any of these questions was YES, a map indicating the affected area must be included in Appendix A.

7. 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 close (within 20m) to the site? If YES, explain:	<input type="checkbox"/>	NO
	Uncertain	
A heritage study and palaeontological desktop study have been completed, refer to Appendix D for full reports. The reports suggest that no heritage or palaeontological resources will be affected.		

If uncertain, conduct a specialist investigation by a recognised specialist in the field (archaeology or palaeontology) to establish whether there is such a feature(s) present on or close to the site. Briefly explain the findings of the specialist:

No heritage sites were found during the site inspection including no surface evidence of archaeological sites or artefacts. The area is also not part of any known cultural landscape.
The shales of the Vryheid Formation could contain impression fossils of plants of the <i>Glossopteris</i> flora, however, they have yet to be recorded from the proposed site for the low level bridge at Mondlo.
It is unlikely that any well-preserved fossils occur in the proposed infrastructure site in the shales and mudstones. Furthermore, no fossils have been recorded from this area. Nonetheless rocks of this type and age are potentially fossiliferous, as indicated in the SAHRIS palaeo-sensitivity map. As there is a chance find, a monitoring protocol is recommended.
As far as the paleontology is concerned the proposed development can go ahead. Any further paleontological assessment would only be required after excavations and building have commenced and if fossils are found by the geologist or environmental personnel.

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

<input type="checkbox"/>	NO
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Is it necessary to apply for a permit in terms of the National Heritage Resources Act, 1999 (Act 25 of 1999)?

	NO
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If YES, please provide proof that this permit application has been submitted to SAHRA or the relevant provincial authority.

8. SOCIO-ECONOMIC CHARACTER

a) Local Municipality

Please provide details on the socio-economic character of the local municipality in which the proposed site(s) are situated.

Level of unemployment:

As per the Abaqulusi IDP (2017-18), the employment status is per table below:

Employment Status	Census 2001	Census 2011
Labour absorption rate	19.4%	22.3%
Unemployment rate	59.4%	35.4%
<i>Unemployment by sex</i>		
Male	53.8%	32.0%
Female	65.2%	38.8%
Youth unemployment	69.2%	45.1%
Labour participation rate	47.8%	34.5%

Economic profile of local municipality:

The following details from for economic profiles have been extracted from the IDP:

Poverty

Category	Census 2011	Community Survey 2016
Poverty head count	11.2%	11.4%
Intensity of poverty	41.9%	43.3%

Households and Services

Households/Services	Census 2011	Community Survey 2016
Total households	43 299	51 910
Average household size	4.9	4.7
Female headed household	50.0%	50.2%
Child headed households	1.7%	2.0%
Access to piped water	83.5%	72.7%
Access to electricity	72.1%	79.7%
Access to sanitation	40.9%	87.8%
Tenure status (% owned)	66.6%	63.3%

Housing

Census 2011		Community Survey 2016	
Number	Percentage	Number	Percentage
Formal dwelling	34 134 78.8	37 746 72.7	
Traditional dwelling	7 863 18.1	9 407 18.1	
Informal dwelling	929 0.2	4 675 9.0	
Other	374 0.08	82 0.2	

Level of education:

As per the Abaqulusi IDP (2017-18), the education status is per table below:		
Highest Level of Education	Census 2011	Community Survey 2016
No schooling (aged 20+)	16.9%	8.1%
% completed matric (aged 20+)	28.1%	33.4%
% completed higher education	6.6%	6.2%

b) Socio-economic value of the activity

What is the expected capital value of the activity on completion?	R10 000 000	
What is the expected yearly income that will be generated by or as a result of the activity?	N/A	
Will the activity contribute to service infrastructure?	YES	<input checked="" type="checkbox"/>
Is the activity a public amenity?	<input checked="" type="checkbox"/>	X NO
How many new employment opportunities will be created in the development and construction phase of the activity/ies?	100	
What is the expected value of the employment opportunities during the development and construction phase?	R3 000 000	
What percentage of this will accrue to previously disadvantaged individuals?	99 %	
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?	N/A	
What percentage of this will accrue to previously disadvantaged individuals?	N/A	

9. BIODIVERSITY

Please note: The Department may request specialist input/studies depending on the nature of the biodiversity occurring on the site and potential impact(s) of the proposed activity/ies. To assist with the identification of the biodiversity occurring on site and the ecosystem status consult <http://bgis.sanbi.org> or BGIShelp@sanbi.org. Information is also available on compact disc (cd) from the Biodiversity-GIS Unit, Ph (021) 799 8698. This information may be updated from time to time and it is the applicant/ EAP's responsibility to ensure that the latest version is used. A map of the relevant biodiversity information (including an indication of the habitat conditions as per (b) below) and must be provided as an overlay map to the property/site plan as Appendix D to this report.

a) Indicate the applicable biodiversity planning categories of all areas on site and indicate the reason(s) provided in the biodiversity plan for the selection of the specific area as part of the specific category)

Systematic Biodiversity Planning Category				If CBA or ESA, indicate the reason(s) for its selection in biodiversity plan
Critical Biodiversity Area (CBA)	X Ecological Support Area (ESA)	Other Natural Area (ONA)	No Natural Area Remaining (NNR)	The site is noted to be an Optimal area, by virtue of its proximity to the CBA Irreplaceable site in the project area.

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b) Indicate and describe the habitat condition on site

Habitat Condition	Percentage of habitat condition class (adding up to 100%)	Description and additional Comments and Observations (including additional insight into condition, e.g. poor land management practises, presence of quarries, grazing, harvesting regimes etc).
Natural	0%	
Near Natural (includes areas with low to moderate level of alien invasive plants)	40%	The riparian area and wetland consist of low levels of alien species, but show signs of other disturbance, viz. disturbed ecological regimes
Degraded (includes areas heavily invaded by alien plants)	30%	The riparian areas consist of well vegetated but disturbed ecological regimes. Despite being well vegetated, the subject sites are subject to alien infestation, being grazed and are moderately modified.
Transformed (includes cultivation, dams, urban, plantation, roads, etc)	30%	The informal tracks and grazing activity have transformed the subject sites.

c) Complete the table to indicate:

- (i) the type of vegetation, including its ecosystem status, present on the site; and
- (ii) whether an aquatic ecosystem is present on site.

Terrestrial Ecosystems		Aquatic Ecosystems							
Ecosystem threat status as per the National Environmental Management: Biodiversity Act (Act No. 10 of 2004)	Critical	Wetland (including rivers, depressions, channelled and unchannelled wetlands, flats, seeps pans, and artificial wetlands)	Estuary	Coastline					
	Endangered								
	X Vulnerable								
	Least Threatened								
		X YES	NO	UNSURE	YES	X NO	YES	X NO	

- d) Please provide a description of the vegetation type and/or aquatic ecosystem present on site, including any important biodiversity features/information identified on site (e.g. threatened species and special habitats)

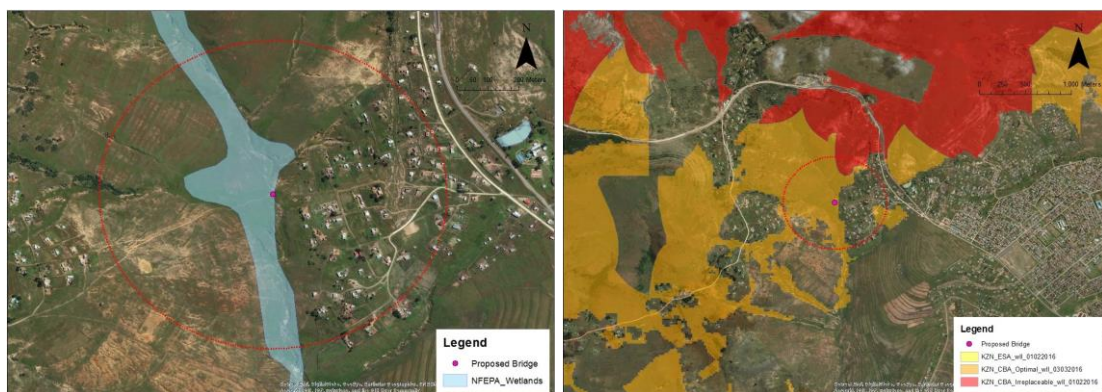
The proposed bridge site is situated on the upper reaches of the Mvunyane River, a minor tributary of the White Mfolozi River. The affected section of the watercourse is narrow, with an active channel of 1 to 2 m in width and a depth of less than 0.5 m. Flow is expected to be seasonal, with some water remaining in deeper pools but with no flow – i.e. stagnant. The watercourse is classified as a Type B stream.

The associated riparian zone was narrow and identifiable by a change in vegetation and an obvious macro bank. The non-marginal zone was characterised by tall tufted grasses favouring disturbed soils (eroded soils) such as *Hyparrhenia hirta*, *Cymbopogon* species and *Imperata cylindrica*. The marginal zone consisted of a narrow band of sedges, grasses and herbs, associated with the active channel.

Species associated with the marginal zone include the following; *Imperata cylindrica*, *Berula repanda*, *Juncus effusus*, *Plantago major**, *Lipocarpa chinensis* and *Kyllinga melanosperma*. Much of the vegetation was short and appeared to have been heavily grazed. Substrate within the active channel was dominated by bedrock with fine clayey silts present in places. These areas of deposition supported the marginal zone vegetation.

The location of the site within grassland vegetation suggests that the reference state for the riparian habitat would have been dominated by graminoids with the occasional or clustered occurrence of small trees and shrubs. The current state, although dominated by graminoids, displayed indications of disturbance and habitat alteration. Erosion and channel scour were the prominent vectors of habitat change. These were likely to have been brought about by changes in catchment hydrology, livestock watering/crossing, overgrazing and a lack of veld management. Erosion has resulted in pioneer and secondary vegetation occurring in the disturbed areas particularly within the non-marginal zone.

Vegetation within the marginal zone is dominated by grasses, sedges and herbaceous species. Limited exotic invasion was noted. The VEGRAI model indicates the riparian habitat to be “moderately modified” (EC – C).



Map showing NFEPA wetlands on site; and KZN CBA Optimal/Ecological Support area



Image showing fish support area

An extensive wetland area was identified to the west of the proposed crossing point. The wetland was classified as an unchannelled valley bottom wetland. The wetland is fed by a small watercourse that drains a steep slope. The watercourse is ephemeral, fed by surface runoff. The variability associated with the flow of the watercourse is the primary reason for the temporary nature of the wetland. Flow appears to be spread over the HGM unit, with slight concentrations associated with depressions and gulleys within the HGM unit. The origin of these gulleys may be from livestock trampling leading to erosion and/or excavation of clayey substrate by residents. A artificial channel was noted near a foot path through the HGM unit. It is assumed that this channel was created to channel surface flow from the north-western slope away from the foot path, maintaining access across the system.

The system was dominated by grass cover, which was comparatively lush compared to adjacent slopes, despite clear evidence of heavy grazing. Due to the heavy grazing and possible recent burning of grass cover, grass identification was challenging. The soil within the temporary wetland area ranged from dry to wet and was generally clayey in nature. In contrast to the surrounding lightly coloured stony and sandy soils, the soil within the HGM unit was light to dark brown and fine textured. Some mottling was evident around root nodes within the soils. The weak hydromorphic indicators and dominance of grass species indicate a temporary wetland condition. The area of the HGM unit as delineated is 36086 m².

The wetland unit identified is a functional wetland providing a number of biophysical ecoservices at a “moderately high” and “high level”. These included *Flood Attenuation, Sediment Trapping, Phosphate Removal, Nitrate Removal, Toxicant Removal* and *Erosion Control*.

A number of characteristics of the wetland were definitive in establishing the functional state of the wetland. These included the temporary nature of the system, the steepness of the catchment, clear indicators of sediment accumulation within the system and the gradient of the HM units itself. The system is driven by the supply of surface flow from the upstream watercourse, which drains a steep, erosion prone catchment. The water supplied to the system is thus expected to have a high sediment content. The comparatively flat gradient of the HGM unit facilitates dispersion the surface flow, promoting sediment deposition and percolation of surface water through the sediment layers, before reaching the Mvunyane River channel. This mechanism promotes the ecosevices mentioned above.

The WET-Health assessment provides a PES rating of EC “C” or moderately modified. The hydrology of the HGM unit was affected by an increase in runoff as a result of settlement, informal road infrastructure and agricultural activities within the catchment.

This has in turn facilitated scour of the watercourse feeding the HGM unit, delivering additional sediment to the HGM unit.

Sedimentation was evident in the upper reaches of the HGM unit, while gulleys, potentially formed by localised erosion we present within the lower portion of the unit and along the margins, near the interface with the adjacent slope. An artificial drainage channel and well used footpath were also present, potentially influencing the hydrology and geomorphology within the HGM unit. The vegetation within the HGM unit was dominated by graminoids and appeared to be heavily grazed and generally short in nature. Exotic invasion was low, however the sustained low intensity impact imposed by grazing and poor veld management is believed to have reduced the diversity of the vegetation within the wetland and reducing the effective surface runoff. Change scores were predicted to be negative, with low to moderate levels of degradation expected based on current land use conditions.

Only one fish species was captured *E. anoplus*. Spawning male and female fish were noted. Males were clearly identifiable by the distinct bright golden colouration. Females were larger and drab in colour.

This indicates that the upper reaches of the Mvunyane River supports suitable spawning habitat for *E. anoplus*. The lack of species diversity observed resulted in a low FRAI score and an EC of E suggesting a greatly modified system. This possibly underestimate the status of the ichthyofaunal community of the upper reaches of the Mvunyane River. Sampling was undertaken soon after a dry period and the presence of sustained flow is likely to facilitate the movement of other fish species into the upper reaches of the system. The reach is important as a spawning ground for *E. anoplus*, which is understated in the FRAI results


The affected section of the system was described as “largely natural” (EC – B). The DWS PES database (2014) indicates a PES of D, however this includes a much more extensive reach of river and considers additional impacts not observed at the crossing site.

At the proposed crossing site, the affected section of river was not affected by any flow regulation or attenuation structures. Slight changes in catchment runoff were noted due to low impact catchment activities – settlement, grazing of livestock and subsistence agriculture. Water quality, in the absence of obvious point source pollution sources, was considered moderate to good with turbidity and sediment load being identified as issues. The condition of the stream bed indicated some change (scour) as a result of the hydrological changes mentioned above. A range of substrate and instream habitat was present. With the exception of areas of erosion, the riparian habitat was generally intact, particularly the marginal zone. Disturbance was generally isolated to livestock crossings. No introduced instream biota were identified.

SECTION C: PUBLIC PARTICIPATION

1. ADVERTISEMENT AND NOTICE

Note that some of the Public Participation has been conducted under the Fuze Environmental letterhead. This is because Fuze is sub consulted to SA Sheq. This does not affect the PPP or validity of comments

Publication name	Vyheid Herald: Advert below: 
Date published	24 November 2017 (ad placed under Fuze Environmental Services)
Site notice position	Latitude Longitude
Date placed	No co-ordinates however photos of notices are available 15 January 2018

Include proof of the placement of the relevant advertisements and notices in Appendix E1.

SITE NOTICES:



Notices placed at a shop near Mondlo/Ezingadeni; and at the Mondlo SAPS, at the Thusong Centre and at a phone booth outside the Post office.

2. DETERMINATION OF APPROPRIATE MEASURES

Provide details of the measures taken to include all potential I&APs as required by Regulation 41(2)(e) and 41(6) of GN 733.

Key stakeholders (other than organs of state) identified in terms of Regulation 41(2)(b) of GN 733.
See complete CR report attached below, and as Appendix E

Include proof that the key stakeholder received written notification of the proposed activities as Appendix E2. This proof may include any of the following:

- e-mail delivery reports;
- registered mail receipts;
- courier waybills;
- signed acknowledgements of receipt; and/or
- or any other proof as agreed upon by the competent authority.

3. ISSUES RAISED BY INTERESTED AND AFFECTED PARTIES

See complete CR report attached below, and as Appendix E

4. COMMENTS AND RESPONSE REPORT

See complete CR report attached below, and as Appendix E

The practitioner must record all comments received from I&APs and respond to each comment before the Draft BAR is submitted. The comments and responses must be captured in a comments and response report as prescribed in the EIA regulations and be attached to the Final BAR as Appendix E3.

5. AUTHORITY PARTICIPATION

See complete CR report attached below, and as Appendix E

Authorities and organs of state identified as key stakeholders:

Authority/Organ of State	Contact person (Title, Name and Surname)	Tel No	Fax No	e-mail	Postal address

Include proof that the Authorities and Organs of State received written notification of the proposed activities as appendix E4.

In the case of renewable energy projects, Eskom and the SKA Project Office must be included in the list of Organs of State.

6. CONSULTATION WITH OTHER STAKEHOLDERS

See complete CR report attached below, and as Appendix E

Note that, for any activities (linear or other) where deviation from the public participation requirements may be appropriate, the person conducting the public participation process may deviate from the

requirements of that sub-regulation to the extent and in the manner as may be agreed to by the competent authority.

Proof of any such agreement must be provided, where applicable. Application for any deviation from the regulations relating to the public participation process must be submitted prior to the commencement of the public participation process.

A list of registered I&APs must be included as appendix E5.

Copies of any correspondence and minutes of any meetings held must be included in Appendix E6.

COMMENTS AND RESPONSE REPORT

The Comments and Responses Report (CRR) captures the comments and issues raised by all role players during the Environmental Impact Assessment (EIA) and Water Use License Application processes for the proposed Jennings road upgrade. This CRR is a record of all the comments and issues raised during the initial public participation phase.

Comments included here are from the preliminary stage (BID distribution, placement of on-site notices and newspaper advert, as well as public meeting).

The submission of this draft BAR for comment comprises of the major core phase of the public participation exercise; comments arising from the circulation of the draft BAR will be included in the final report submitted to DEDTEA and DWS for authorization.

IAP, AUTHORITY, GOVERNMENT DEPARTMENTS, STAKEHOLDER & CONTACT DETAILS	COMMENT	EAP RESPONSE
Department of Agriculture, Forestry, and Fisheries		
<p><i>N. Zikhali</i></p> <p>Tel: 033 392 7721</p> <p>Email:</p> <p>PMBResourceCentre@daff.gov.za</p>	<p><u>Comment on BID</u></p> <p>-Confirmed receipt of the BID document.</p>	<p>-Reminders for comments on BID submitted.</p>
Department of Water and Sanitation		
<p><i>N. Terry</i></p> <p>Tel: 031 336 2809</p> <p>Email: ndout@dws.gov.za</p> <p>P.O Box 1018, Durban , 4000</p>	<p>Comments on BID</p> <p>- No comments received.</p>	<p>- Reminders for comments on BID submitted.</p>
Amafa Heritage KZN		
<p><i>B.Pawandiwa</i></p>	<p>Amafa is being engaged by the Heritage Specialist for comment on</p>	

<p>Tel: 033 394 6543 Fax: 342 6097 Email: bernadetp@amafapmb.co.za</p> <p>P. O. Box 2685, Pietermaritzburg, 3200</p>	<p>the application, comments will be included in the final BAR.</p>	
Ezemvelo KZN Wildlife		
<p><i>IEM Head /</i> <i>Asanthia Nerissa Pillay</i> Email: <i>Nerissa.Pillay@kznwildlife.com</i></p> <p>Tel: 033 845 1999 Fax: 033 845 1499</p> <p>Queen Elizabeth Park, Peter Brown drive, Montrose, Pietermaritzburg P.O Box 13053. Cascades, Pietermaritzburg, 3202</p>	<p><u>Comments on BID</u></p> <p>- No comments received.</p>	<p>-Reminders for comments on BID submitted.</p>
KZN Department of Human Settlements		
<p><i>T. Biyela</i></p> <p>Tel: 031 336 5416 Email: Thula.Biyela@kzndhs.gov.za</p> <p>Private Bag X5467, Durban, 4000</p>	<p><u>Comments on BID</u></p> <p>- No comments received.</p>	<p>- Reminders for comments on BID submitted.</p>
<p>IAP - Siyonqoba Sibiya, via email</p>	<p>-Wished to be registered as an IAP.</p>	<p>-Was registered and given a copy of the BID. Will be provided a copy of the draft BAR.</p>
<p>IAP community member – Via telephone</p>	<p>-Called to enquire regarding project start date and how jobs could be received.</p> <p>-Did not want any EIA documentation.</p>	<p>-The project is still at EIA stage, construction cannot commence until approvals are received.</p> <p>Once approvals are received, which is expected around August 2018, the engineers will engage with the ward councillor, the Nkosi and a PLC/PSC will likely be established; the community will be advised of the pending commencement of construction via the engineer and client using the above channels, and via sign boards near the project site. The appointed contractor will be responsible for labour hiring.</p>

IAP community member – Via telephone	-Called to state that they want to be informed when construction commences and want employment opportunities. -Did not require EIA documentation.	Construction is expected around August 2018, after EIA and WULA approval, the engineers will engage with the ward councillor, the Nkosi and a PLC/PSC will likely be established; the community will be advised of the pending commencement of construction via the engineer and client using the above channels, and via sign boards near the project site. The appointed contractor will be responsible for labour hiring.
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Public Meeting:

A meeting was held on the 23 November 2017, at the Thusong Centre at 12:30. The meeting was originally planned for the library. Ward Councillor Mr. Hector Nxumalo had assisted in facilitating this meeting. Members of the public and ward committee had attended. The EIA and WULA process, importance of PPP and the project was explained. A site visit was conducted subsequent to the conclusion of the meeting.

Meeting Images:



Comments from Public Meeting:

Community Question	EAP Response
-We support this project as it will lead to economic emancipation as the bridge will provide employment and allow access to the other side	-Noted.
-What type of bridge will it be?	-A low level bridge.
-How long and wide will it be, and will it have any pedestrian sidewalks	-At this stage the dimensions are unknown as design is still being finalised and we do not yet have the drawing, but it will probably have pedestrian walkways.
-What is the budget for the project	-it is very small, the exact amount is unknown at this stage, could be R2m
-How long will this EIA and WULA process take?	-It takes around 8 months to finalise provided all documents are signed timeously and information is available.
-Will you fast track where you can?	-We can fast track certain aspects, but as this is a team effort; other role players need to provide

	information as quickly as possible. The DEDTEA and DWS have regulated timeframes to provide responses and decisions, as well as a set minimum comment period on the draft report.
-How important is the Nkosi for the EIA process as they did not make it to come here, what can you do to bridge this gap.	-Nkosi/Nduna is very important for commenting on or accepting the project. At this stage all stakeholders must be given an opportunity to comment. Environmental Affairs will be commenting on the draft report. The ward councillor can assist in communicating with the Nkosi/Nduna going forward, but we require him to sign an acceptance of the project
-There is a document that the Nkosi signed for the bridge and a creche.	- Will add that into the report if received however, it is key that we have an agreement of acceptance specific only to the bridge and its EIA process.
-Can you explain the EIA process again	- Yes, process was explained
-As a young person, how can I contribute to the EIA process	-You can provide comments on the EIA which will be included in our report; our contact details are included in the handout. You have attended this meeting thus your input will be noted in the report.
-Can you groom someone inside our community so that if there are any more projects they can help with the EIA	-One needs to have qualifications in order to undertake this work and be registered once the EAP registration body is functional.
-Why do we need a WULA and how big an area needs to be assessed	-The survey area is 500m radius from, site, so if there are any wetlands within 500m then you will need to apply for a WULA before constructing the bridge, this is needed in terms of the National Water Act and governed by DWS in order to protect watercourses and wetlands. The construction within the river is regulated by both DEDTEA and DWS.
-Any development is appreciated and needed in this area so we welcome this project.	-Noted.

SECTION D: IMPACT ASSESSMENT

The assessment of impacts must adhere to the minimum requirements in the EIA Regulations, 2014 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. 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

Provide a summary and anticipated significance of the potential direct, indirect and cumulative impacts that are likely to occur as a result of the planning and design phase, construction phase, operational phase, decommissioning and closure phase, including impacts relating to the choice of site/activity/technology alternatives as well as the mitigation measures that may eliminate or reduce the potential impacts listed. This impact assessment must be applied to all the identified alternatives to the activities identified in Section A(2) of this report.

A complete impact assessment in terms of Regulation 19(3) of GN 733 must be included as Appendix F.

Assumptions, Limitations and Gaps in knowledge:

A description of impacts used in this assessment was based on professional experience and judgement, projects conducted for similar projects within similar environments, as well as specialist input, site investigations and site-specific evaluations during the summer months. In assessing the risks and impacts, the Precautionary Principle was applied.

The assessment is also underpinned by the project information, available drawings and layouts provided by the Applicant (via the engineer) at the time of the assessment and is taken to be correct.

IMPACT AND RISK ASSESSMENT

CONSTRUCTION, POST CONSTRUCTION/OPERATIONAL PHASE IMPACTS

Alternative A1 and S1: Refer to EMPR for mitigation measures

Potential Impact and Risk	Description of impact, aspect and risk	Mitigation
Direct and Indirect Impacts		
Construction related impacts	-Impacts as a result of direct construction related activity, including site set up, will comprise the bulk of the impacts on the receiving environment. These will extend to movement of heavy vehicles and plant, supply of construction material, dust entrainment, erosion, diesel/fuel spills.	-Proper selection and approval of camp site location. -Spill prevention, clean up and spill kits -Proper waste management, handling and storage -Limit the extent of disturbance. -The site camp must not be situated within the open areas associated with the floodplain wetland (HGM 1 and 2) or any of the watercourses. The site camp must be positioned within the extent of the settled areas only. -The full extent of site set up, construction related activity must not exceed 300m ² -All plant must be inspected for leaks prior to undertaking work within the riparian zone or active channel. -Undertake construction during the dry winter period to limit the disturbance of flow and risk of causing downstream sedimentation.
Habitat Loss and disturbance	-Loss of marginal and non-marginal riparian habitat and wetland habitat expected. Habitat loss will be localised and limited in extent.	-Limit disturbance footprint - Revegetation and rehabilitation of site -Alien plant control and removal post construction
Hydrological changes	-Mvunyane River expected to be only minimally affected – i.e. during very high flows. Structure not expected to affect active channel under normal flow conditions. Footing from the west will affect surface flow of water over the temporary wetland area. -It is unlikely that the bridge will significantly influence the flow of the river during construction and operation. The active channel is very narrow and should be easily spanned, with engineered support infrastructure placed either side of the channel.	-It is recommended that consideration be taken of the following in the design of the structure: • Allow for high flows (1:10 year flood or similar) to pass unimpeded beneath the crossing • Columns/culverts must offer as little resistance to flow as possible. For example, the use of pylon supports rather than numerous box culverts or stacked pipe culverts. • Given the width of the active channel, supports should be positioned outside of the active channel.

BASIC ASSESSMENT REPORT

	<p>-The loss of wetland habitat and infilling/hardening of the wetland area due to the construction of the access road and bridge footing is likely to have a localised effect on the wetland hydrology. Changes are likely to include the redirection of surface flow, the attenuation of surface flow and potentially localised changes in saturation</p>	<ul style="list-style-type: none"> • Consideration of the direction of flow. The structure should not cause the flow of the river to deviate. <p>In order to reduce the localised hydrological impacts identified for the adjacent wetland, the access road through the wetland must allow for subsurface flow. The use of dump rock will facilitate the percolation of water and promote subsurface flow beneath the road. Surface “V” drains or culverts beneath the road should be integrated to allow for the movement of surface water and limit the attenuation of flow.</p>
Heritage and Palaeontological	<p>-During construction, subsurface artefacts and fossils may be uncovered from excavations.</p>	<p>-Should any specimens be discovered, the heritage or palaeontological specialist must be contacted for the way forward and for permit applications if required.</p>
Stormwater. Erosion and sedimentation	<p>-Although the additional hardpan area associated with the bridge is likely to result in increased surface water runoff during operation, the level of influence may be considered to be low. The additional surface water runoff may however contribute to scour and bank destabilisation in the vicinity of the crossing. The soil within the study area appears to be moderate to highly erosive and storm water management measures will need to be implemented in and around new structures</p> <p>During the construction phase, temporary stormwater management measures must be implemented.</p> <p>The control of stormwater during the operational phase requires attention, as long term negative effects may arise as a result of the increase in unregulated stormwater entering the watercourse from the new road. Formal stormwater control measures must be implemented that allow stormwater to be collected, attenuated and disposed of in a manner that will not promote erosion or scour. The use of attenuators, such as chambers and gabion mattresses are recommended for installation at points of release of stormwater into the watercourse.</p>	<p>-Erosion controls must be implemented to prevent the expansion of existing gulleys or the formation of new erosion points. Priority areas for erosion control are areas where there is an obvious gradient and the flow of water can be expected. Measures must include at least, the use of sand bags and silt curtains. Silt curtains must also be placed in the active channel during construction, immediately downstream of the construction activity, where work is being undertaken within or close to the watercourse. These will capture material washed into the watercourse during construction. Material can then be removed. The integrity of the silt curtains will need to be monitored on a daily basis and repaired or replaced when necessary.</p> <p>-Formal stormwater control measures must be implemented that allow stormwater to be collected, attenuated and disposed of in a manner that will not promote erosion or scour. The use of attenuators, such as chambers and gabion mattresses are recommended for installation at points of release of stormwater into the watercourse</p>
Watercourse and	<p>-Surface water impacts can occur due to hydrocarbon</p>	<p>-Spill kits must be available on site.</p>

BASIC ASSESSMENT REPORT

<p>Soil Impacts- Surface ground quality and water</p>	<p>spills, mixing of cement directly on the ground and on unprotected surfaces, cement/concrete spills, waste mismanagement. These spills can in turn be carried off via runoff. Movements into restricted areas, such as permanently wet zones can cause impacts on surface and groundwater. Spillage of cement powder, waste, can cause pollution of both surface and subsurface water and eventually pollute downstream areas via the river channel.</p>	<p>-Oil/hydrocarbon/chemical/cement spills must be prevented in the first instance and cleaned immediately upon discovery. -</p>
<p>Access (general construction impacts)</p>	<ul style="list-style-type: none"> • Increase in traffic resulting from construction can be expected. • The improvement of a small section of track will result in marginal loss of grassland cover. 	<p>-Existing access are to be used to site. -Improvement to access must be restricted to minimal width allowable for safe transit of construction vehicles. The entire working area, including access, must not exceed 300m² in extent.</p>
<p>Air quality</p>	<p>-Dust entrainment and vehicular emissions (exhaust fumes) are expected during construction, from driving of vehicles on cleared surfaces, and operation of equipment, stripped groundcover/soil/bare surfaces, and stockpiles</p>	<p>-Vehicles must adhere to speed limits at all times. -Wetting of exposed surfaces must be undertaken to reduce dust emissions.</p>
<p>Waste management</p>	<p>-Waste will be generated by the construction activity. This includes waste rock/spoil, plastic, paper, steel, concrete rubble, recyclables etc.</p>	<p>-Solid waste must be controlled and managed on a daily basis.</p>
<p>Safety and security</p>	<p>-During construction, opportunities may be presented for crime to occur. Safety risks to staff and community members via excavations and construction traffic can occur.</p>	<p>-The site camp must be fenced, work area to be demarcated, and warning signage must be used.</p>
<p>Post Construction and Operation</p>		
<p>Rehabilitation</p>	<p>-Once construction is completed, all disturbed areas must be rehabilitated, in order to avoid erosion impacts and spread of alien species.</p>	<p>- Riparian and channel bank areas that are damaged as a result of the construction activities must be reshaped and revegetated. The quickest and most suitable method is through the use of a grass mix that includes <i>Eragrostis tef</i>, a fast-growing pioneer grass. Once the grass cover is established, a once off removal of all alien invasive plants from the construction footprint should be undertaken.</p>
<p>Disturbance of</p>	<p>-During construction, disturbance may occur as a result</p>	<p>-Can be mitigated via proper design of bridge crossing and limit</p>

BASIC ASSESSMENT REPORT

<p>instream fauna</p>	<p>of earthmoving and other activities. It is expected that limited direct disturbance of the active channel will take place (i.e. only limited excavation), thus limiting the level of direct disturbance to instream fauna. Influences on faunal communities are likely to be incidental or associated with sedimentation or contamination, should such an event arise. The faunal community, particularly the ichthyofauna appear to utilise the upper reaches of the Mvunyane River on a seasonal basis when adequate flow is present. As such, the faunal community is likely to be resilient and able to recover after a low/no flow event or disturbance via migration or the spread of remaining populations. Impacts during operation is ultimately dependent on the design and intended disturbance of the active channel area. Disturbances may be incidental and temporary in nature. Faunal populations resilient due to natural seasonal variations.</p>	<p>disturbance of active channel area.</p>
<p>Cumulative Impacts</p>		
<p>Impacts on watercourses (-)</p>	<p>During operation, fuel leakages from vehicles will infiltrate the river, and affect downstream water quality. However, there is a certain degree to which river systems can assimilate such impacts. There is a possibility that residents can use the system during high flows to wash their vehicles. The adjacent wetlands could be transformed into parking or turning areas and used for agriculture, thus exacerbating agricultural impacts on the wetland and grassland area, increasing erosion and alien vegetation component, whilst also possibly encouraging further and more proximal residential encroachment.</p>	<p>n/a</p>
<p>Socio-economic (+)</p>	<p>The project construction will provide temporary employment for locals. In the long term, an enhanced road network will enable increased connectively and further access to basic services.</p>	<p>-Employment opportunities must be given to community members, and women in particular, in line with contract specifications and skills level.</p>

BASIC ASSESSMENT REPORT

No Go

The project is required to provide transit over the watercourse for both vehicles and pedestrians. This will improve access to medical and healthcare, shorten travel time to schools and neighbouring settlements and serve as a marginal response to climate change. In addition, informal track will be formalised in future (part of a separate contract) thus the bridge crossing is important.

Should the bridge not be constructed, then the current status quo will remain.

Impact significance calculations for the identified impacts presented above

Impact	Before						Total	After						Total
	N	M	S	E	D	P		N	M	S	E	D	P	
Construction related impacts	-1	2	2	1	1	1	-8	-1	2	1	1	1	1	-4
Habitat loss and disturbance	-1	3	3	1	4	1	-45	-1	3	2	1	4	1	-30
Hydrological changes	-1	2	3	1	4	1	-30	-1	2	2	1	4	0.8	-16.8
Disturbance of instream fauna	-1	2	3	1	1	1	-12	-1	2	2	1	1	1	-8
Storm water runoff	-1	2	2	1	4	1	-20	-1	2	1	1	4	1	-10

* N = Nature (-ve/+ve), M = Magnitude, S = Significance, E = Extent, D = Duration, P = Probability

2. 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.

IMPACT STATEMENT

Impact	Significance without mitigation	Significance with mitigation
Construction activities (as described above)	Medium-Low	Low
Habitat loss and disturbance	High	Medium
Hydrological changes	Medium	Low
Disturbance of instream fauna	Low	Low
Stormwater	Medium	Low
Heritage and Palaeontological	Low	Low

The construction of the above project and undertaking of the listed activities will pose impacts on the environment. However, mitigation measures as per the EMPr will assist in managing the identified impacts.

The project is required to provide transit over the watercourse for both vehicles and pedestrians. This will improve access to medical and healthcare, shorten travel time to schools and neighbouring settlements and serve as a marginal response to climate change. In addition, informal track will be formalised in future (part of a separate contract) thus the bridge crossing is important.

Should the bridge not be constructed, then the current status quo will remain.

Alternative A (preferred alternative)

As above

Alternative B

N/A

Alternative C

N/A

No-go alternative (compulsory)

The project is required to provide transit over the watercourse for both vehicles and pedestrians. This will improve access to medical and healthcare, shorten travel time to schools and neighbouring settlements and serve as a marginal response to climate change. In addition, informal track will be formalised in future (part of a separate contract) thus the bridge crossing is important.

Should the bridge not be constructed, then the current status quo will remain.

SECTION E. RECOMMENDATION OF PRACTITIONER

Is the information contained in this report and the documentation attached hereto sufficient to make a decision in respect of the activity applied for (in the view of the environmental assessment practitioner)?

<input checked="" type="checkbox"/> YES	<input type="checkbox"/> NO
---	-----------------------------

If "NO", indicate the aspects that should be assessed further as part of a Scoping and EIA process before a decision can be made (list the aspects that require further assessment).

N/A

If "YES", please 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.

It is recommended that alternative A1 and S1 (i.e. construction of a culverts/bridge) be accepted from an environmental and social perspective.

The mitigation measures and controls specified in the EMPr and the specialist studies must be strictly implemented.

The design recommendations as per the ecological study must be enforced in the design of the bridge.

The construction phase must be monitored by an ECO, monthly.

The bridge will provide temporary employment for locals. In the long term, an enhanced road network will enable social development and promote economic activities. Local labour must be given preference for job opportunities, during construction.

The project is required to provide transit over the watercourse for both vehicles and pedestrians. This will improve access to medical and healthcare, shorten travel time to schools and neighbouring settlements and serve as a marginal response to climate change. In addition, informal track will be formalised in future (part of a separate contract) thus the bridge crossing is important.

Is an EMPr attached?

<input checked="" type="checkbox"/> YES	<input type="checkbox"/> NO
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The EMPr must be attached as Appendix G.

The details of the EAP who compiled the BAR and the expertise of the EAP to perform the Basic Assessment process must be included as Appendix H.

If any specialist reports were used during the compilation of this BAR, please attach the declaration of interest for each specialist in Appendix I.

Any other information relevant to this application and not previously included must be attached in Appendix J.

SA SHEQ CONSULTANTS – JENITHA GIRDARY

NAME OF EAP



SIGNATURE OF EAP

09/03/2018

DATE

Jenitha Girdary

SECTION F: APPENDIXES

The following appendixes must be attached:

Appendix A: Maps

Appendix B: Photographs

Appendix C: Facility illustration(s)

Appendix D: Specialist reports (including terms of reference)

Appendix E: Public Participation

Appendix F: Impact Assessment

Appendix G: Environmental Management Programme (EMPr)

Appendix H: Details of EAP and expertise

Appendix I: Specialist's declaration of interest

Appendix J: Additional Information