



Draft Basic Assessment Report For:

The Proposed Afton and Natalie (Sane Village) Bridge, Makhado Local Municipality



Date: October 2020





	DOCUMENT TITLE:	Draft Basic Assessment Report for the Proposed Aftoni and Natalie (Sane Village) Bridge	
	DOC NO:	MC.Makhado Bridge.BA-WULA.001	

DOCUMENT IDENTIFICATION

Project Information

CLIENT	PROJECT NAME	PROJECT DURATION
Makhado Local Municipality	Basic Assessment and Water Use Licence Application for the Afton and Natalie (Sane Village) Bridge, Makhado Local Municipality	March 2020 to March 2021

The Following have Drafted, Reviewed and Commented on this Document:

QUALITY CONTROL	NAME	DESIGNATION	DATE	SIGNATURE
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REPORT STATUS	DRAFT	✓	FINAL	
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LIST OF ACROYNYS

Acronym	Description
BAR	Basic Assessment Report
DWS	Department of Water and Sanitation
EAP	Environmental Assessment Practitioner
EIA	Environmental Impact Assessment
EMPr	Environmental Management Programme
NEMA	National Environmental Management Act 107 of 1998 (as amended)
NEMWA	National Environmental Management Waste Management Act 59 of 2008
NWA	National Water Act 36 of 1998
OHS	Occupational Health and Safety Act 85 of 1993
PPP	Public Participation Process
WUL	Water Use Licence



LIMPOPO

PROVINCIAL GOVERNMENT
REPUBLIC OF SOUTH AFRICA

DEPARTMENT OF ECONOMIC DEVELOPMENT, ENVIRONMENT & TOURISM

BASIC ASSESSMENT REPORT - EIA REGULATIONS, 2014

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.

File Reference Number:

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NEAS Reference Number:

(For official use only)

Date Received:

Due date for acknowledgement:

Due date for acceptance:

Due date for decision

Kindly note that:

1. The report must be compiled by an independent Environmental Assessment Practitioner.
2. 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.
3. Where applicable **tick** the boxes that are applicable in the report.
4. 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 Department of Economic Development, Environment and Tourism as the competent authority (Department) for assessing the application, it may result in the rejection of the application as provided for in the regulations.
5. An incomplete report may be returned to the applicant for revision.
6. Unless protected by law, all information in the report will become public information on receipt by the department. Any interested and affected party should be provided with the information contained in this report on request, during any stage of the application process.

7. The Act means the National Environmental Management Act (No. 107 of 1998) as amended.
8. Regulations refer to Environmental Impact Assessment (EIA) Regulations of 2014.
9. The Department may require that for specified types of activities in defined situations only parts of this report need to be completed. No faxed or e-mailed reports will be accepted.
10. This application form must be handed in at the offices of the Department of Economic Development, Environment and Tourism:-

<p><u>Postal Address:</u> Central Administration Office Environmental Impact Management P. O. Box 55464 POLOKWANE 0700</p>	<p><u>Physical Address:</u> Central Administration Office Environmental Affairs Building 20 Hans Van Rensburg Street / 19 Biccard Street POLOKWANE 0699</p>
<p>Queries should be directed to the Central Administration Office: Environmental Impact Management: -</p> <p>For attention: Mr E. V. Maluleke Mobile: 082 947 7755 Email: malulekeev@ledet.gov.za</p>	

View the Department's website at <http://www.ledet.gov.za/> for the latest version of the documents.

SECTION A: ACTIVITY INFORMATION

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

YES✓	NO
------	----

If YES, please complete the form entitled “Details of specialist and declaration of interest” or appointment of a specialist for each specialist thus appointed:

Any specialist reports must be contained in **Appendix D**.

Refer to **Appendix D** for the specialist reports.

1. Activity Description

Describe the activity, which is being applied for, in detail¹:

Project Background

Makhado Local Municipality intends to design and construct the proposed bridge between Sane and Natalie villages located in Makhado Local Municipality. The proposed bridge comes as a replacement of an old bridge which was built in the same area over the past years but has, however, collapsed. Due to the collapsed bridge, the community including school children and workers cannot cross over Mufungude river during rainy days as the river gets flooded and hence, they cannot go to school, health facilities, work, shops, funerals, etc. Mufungude river flows to Nzhelele dam and is located ~ 10km north west of the dam. An existing makeshift timber footbridge is not sustainable, since the fragile bridge experience partial collapse during every flood event and needs to be continually repaired.

Description of the Proposed Project Activities

The proposed project entails the construction of a two-way vehicular and two-way pedestrian’s walkway bridge over Mufungude river, between Sane and Natalie villages as follows:

- The size of the proposed bridge will be approximately 50m in length, 10m width and 4m in height (top of handrail).
- The cell opening of the proposed bridge will be about 3m high;
- Two (2) traffic lanes of 3,0 m width;
- Two (2) pedestrian sidewalks, each effectively 1,3 m wide;
- Installation of steel guardrails along the deck edges, extended to provide a pedestrian steel handrail;

¹ Please note that this description should not be a verbatim repetition of the listed activity as contained in the relevant Government Notice, but should be a brief description of activities to be undertaken as per the project description.

- Provide intermittent concrete guide blocks between the vehicular traffic and the pedestrians; and
- Other activities associated with construction of the proposed bridge are the road works and earth work (embankment on the side of the bridge). The road is proposed to be 7m wide and 350m in length.

Study Area / Site Description

The proposed project is located in Natalie 170 MT, Portion 0 and Msekwa 194 MT, Portion 0, within Sane and Natalie villages, in Makhado Local Municipality, Limpopo Province (Refer to **Figure 1** and **Appendix A** for Locality Map). The properties fall outside an urban area. The current land use of the area comprises a river with agricultural activities taking place at the riverbanks. The surrounding land uses include residential areas.

The proposed project site is accessible from the existing gravel roads from Sane (through Maranikwe) and Mangwele Villages.

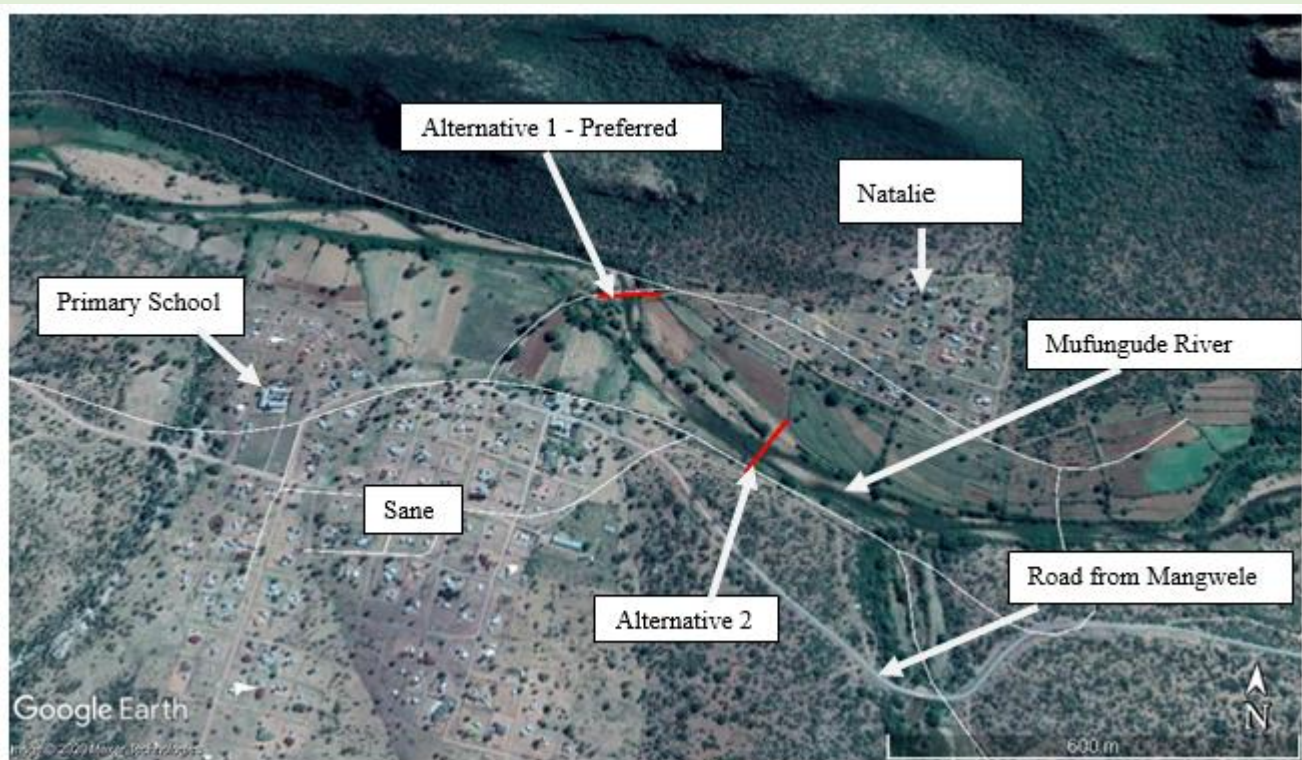


Figure 1: Location of the Study Area in relation to the surrounding land uses

Detailed Project Description

Pre-Construction and Construction process for the proposed development

A description of the activities which forms part of the proposed construction of a bridge is provided below:

- **Site camp establishment** – site camp will be established in close proximity to the site, where all

equipment to be used during the construction of the proposed bridge will be kept;

- **Site clearance and demolition** – clearance of vegetations and site preparation will be done on the area earmarked for the construction of the proposed bridge;
- **Excavations** – during the initial excavation in preparation of the columns, the first step would be to divert one side of the river. Water will be pumped out from one side of the riverbank to the other side using a generator. The generator will be placed on top of the firm drip tray to allow for any unforeseen circumstance such as oil spill. The diversion will minimally affect the flow or turbidity of the water. Erosion or disturbance to the riverbed or banks will be prevented. The pumping of the water will be consistent and at a rate that will be similar to that of the river system so as not to drastically change the energy of the system. Construction activities will preferably be carried out during the dry months where water flow will be reduced thus lessening the impact on the river system.
- **Foundations and Steel Structures** - next step would be to dig for foundations of the columns and the steel structure for column to be placed firmly on the foundation. The steel structures will be hold firm by the concrete mix which will be transported to the site through concrete mixer truck. The similar process will be done throughout the site in preparation for the bridge base until all is complete. The top structure of the bridge will only be assembled using similar approach (transported concrete mix and steel structure).
- **Stockpile** - during construction of the proposed bridge, it is anticipated that some boulders of rocks will be moved together with other soil material to be done on a designated area (one side of the river) and be stored temporally, for use during the rehabilitation of the affected area. All rock materials found onsite will be used back in retaining the riverbanks and in assisting with strengthening the retainer structure such as gabion structure. Planting of accepted vegetation will be done to assist further the enhancement of rehabilitation of each side of the bridge end and areas around the foot of the column (edge columns only).
- **Water use** – water use on site is anticipated to be minimal as all material will be transported ready for use by the contractor. However, it is anticipated that water use (extracted from the river) would be limited to a maximum of 1000 litres per month; which will mostly be used for washing equipment without oil (such as spades, cleaning of steel, etc). Washing of tools, especially the big machine used for transporting the ready mixed concrete will not be allowed on site as this will affect species down the river.
- **Road and Earthworks** – topsoil will be removed on the area earmarked for road construction (both

sides of the bridge), followed by layer works with gravel surfacing. The fill materials will be sourced from the borrow pit and embankment of maximum of 3m above the natural ground will be formed for the road.

The construction of the proposed project will take approximately ten (10) months.

Operational Activities

During the operational and maintenance phase of the proposed project, the applicant will ensure that operation and maintenance activities are carried out by suitable qualified individual as the activities are specialised.

Decommissioning Activities

The proposed bridge will remain operational for the unforeseeable future. However, decommissioning of the proposed activities will include reversal of the construction activities. Necessary authorisations for the decommissioning phase will be acquired nearing the time and prior commencement with decommissioning activities.

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. Alternatives should include a consideration of all possible means by which the purpose and need of the proposed activity could be accomplished in the specific instance taking account of the interest of the applicant in the activity. The no-go alternative must in all cases be included in the assessment phase as the baseline against which the impacts of the other alternatives are assessed. The determination of whether site or activity (including different processes etc.) or both is appropriate needs to be informed by the specific circumstances of the activity and its environment. After receipt of this report the Department 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.

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

3. Activity Position

Indicate the position of the activity using the latitude and longitude of the centre point of the site for each alternative site. The co-ordinates should be in degrees, minutes and seconds. The projection that must be used in all cases is the Hartebeeshoek 94 WGS84 spheroid in a national or local projection.

List alternative sites, if applicable.

Latitude (S):

Longitude (E):

Alternative:

Alternative S1² (preferred or only site alternative)

Alternative S2 (if any)

Alternative S3 (if any)

°	'	"	°	'	"
°	'	"	°	'	"
°	'	"	°	'	"

In the case of linear activities:

Alternative:

Latitude (S):

Longitude (E):

Alternative S1 (preferred or only route alternative)

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

22°	46'	17.70"	30°	11'	7.76"
22°	46'	17.86"	30°	11'	5.60"
22°	46'	17.99"	30°	11'	3.76"

Alternative S2 (if any)

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

22°	46'	25.92"	30°	11'	15.77"
22°	46'	28.26"	30°	11'	14.06"
22°	46'	29.33"	30°	11'	13.29"

Alternative S3 (if any)

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

°	'	"	°	'	"
°	'	"	°	'	"
°	'	"	°	'	"

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.

4. Physical Size of the Activity

² "Alternative S.." refer to site alternatives.

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

Alternative:

Alternative A1³ (preferred activity alternative)

Alternative A2 (if any)

Alternative A3 (if any)

or,

for linear activities:

Size of the activity:

	m ²
	m ²
	m ²

Length of the activity:

Alternative:

Alternative A1 (preferred activity alternative)

Alternative A2 (if any)

Alternative A3 (if any)

	~400m
	~400m
	m

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

Size of the site/servitude:

Alternative:

Alternative A1 (preferred activity alternative)

Alternative A2 (if any)

Alternative A3 (if any)

	500m ²
	500m ²
	m ²

5. Site Access

Does ready access to the site exist?

YES ✓	NO
m	

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

Describe the type of access road planned:

Not applicable.

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

³ "Alternative A.." refer to activity, process, technology or other alternatives.

6. Site Or Route Plan

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

Refer to **Appendix A** for the site plan/layout map

The site or route plans must indicate the following:

- 6.1 the scale of the plan which must be at least a scale of 1:500;
- 6.2 the property boundaries and numbers of all the properties within 50 metres of the site;
- 6.3 the current land use as well as the land use zoning of each of the properties adjoining the site or sites;
- 6.4 the exact position of each element of the application as well as any other structures on the site;
- 6.5 the position of services, including electricity supply cables (indicate above or underground), water supply pipelines, boreholes, street lights, sewage pipelines, storm water infrastructure and telecommunication infrastructure;
- 6.6 all trees and shrubs taller than 1.8 metres;
- 6.7 walls and fencing including details of the height and construction material;
- 6.8 servitudes indicating the purpose of the servitude;
- 6.9 sensitive environmental elements within 100 metres of the site or sites including (but not limited thereto):
 - rivers;
 - the 1:100 year flood line (where available or where it is required by Department of Water Affairs);
 - ridges;
 - cultural and historical features;
 - areas with indigenous vegetation (even if it is degraded or invested with alien species);
- 6.10 for gentle slopes the 1 metre contour intervals must be indicated on the plan and whenever the slope of the site exceeds 1:10, the 500mm contours must be indicated on the plan; and
- 6.11 the positions from where photographs of the site were taken.

7. Site Photographs

Colour photographs from the centre of the site must be taken in at least the eight major compass directions with a description of each photograph. Photographs must be attached under **Appendix B** to this form. It must be supplemented with additional photographs of relevant features on the site, if applicable.

Refer to **Appendix B** for the site photographs.

8. Facility Illustration

A detailed illustration of the activity must be provided at a scale of 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.

Refer to **Appendix C** for the facility illustration.

9. Activity Motivation

9(a) Socio-economic value of the activity

What is the expected capital value of the activity on completion?	R 15.8m
What is the expected yearly income that will be generated by or as a result of the activity?	R 0
Will the activity contribute to service infrastructure?	YES√ NO
Is the activity a public amenity?	YES√ NO
How many new employment opportunities will be created in the development phase of the activity?	22
What is the expected value of the employment opportunities during the development phase?	R 3m
What percentage of this will accrue to previously disadvantaged individuals?	100%
How many permanent new employment opportunities will be created during the operational phase of the activity?	0
What is the expected current value of the employment opportunities during the first 10 years?	R 0
What percentage of this will accrue to previously disadvantaged individuals?	0%

9(b) Need and desirability of the activity

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

NEED:			
i.	Was the relevant municipality involved in the application?	YES√	NO
ii.	Does the proposed land use fall within the municipal Integrated Development Plan?	YES√	NO
iii.	If the answer to questions 1 and / or 2 was NO, please provide further motivation / explanation:		
	Not Applicable		

DESIRABILITY:			
i.	Does the proposed land use / development fit the surrounding area?	YES√	NO
ii.	Does the proposed land use / development conform to the relevant structure plans, Spatial development Framework, Land Use Management Scheme, and planning visions for the area?	YES√	NO
iii.	Will the benefits of the proposed land use / development outweigh the negative impacts of	YES√	NO

	it?		
iv.	If the answer to any of the questions 1-3 was NO, please provide further motivation / explanation:		
	Not applicable.		
v.	Will the proposed land use / development impact on the sense of place?	YES	NO√
vi.	Will the proposed land use / development set a precedent?	YES	NO√
vii.	Will any person's rights be affected by the proposed land use / development?	YES√	NO
viii.	Will the proposed land use / development compromise the "urban edge"?	YES	NO√
ix.	If the answer to any of the question 5-8 was YES, please provide further motivation / explanation.		
	The proposed development will affect portions of the farmlands or "agricultural activities" that are currently taking place around Mufungude riverbanks.		

BENEFITS:			
i.	Will the land use / development have any benefits for society in general?	YES√	NO
ii.	<p>The communities of Sane and Natalie are separated by the Mufungude River. Mufungude is a perennial river, flowing fast during seasonal rains in summer and slowing down to nominal flow during the drier winter months. In addition, the river gets flooded during rainy periods. Further, there is an existing makeshift timber footbridge over Mufungude river, but it is not sustainable, since the fragile bridge experience partial collapse during every flood event and needs to be continually repaired. As a result, the Natalie community including school children and workers cannot cross over Mufungude river during rainy days as the river gets flooded and hence, they cannot go to schools, health facilities, workplaces, shops, police stations, funerals, <i>etc.</i> Natalie community are totally cut off from the basic service facilities which are all concentrated south of the river, on average for a period of four (4) weeks per seasonal rain event.</p> <p>The proposed bridge will therefore replace an old bridge which was built in the same area over the past years but has, however, collapsed. As a result, the proposed bridge will ensure access for Natalie community to the basic service facilities during the rainy periods. This bridge will form an integral part of the community as it will be a safe, accessible connection point for the communities especially during peak rainfall periods. Natalie community including school children and workers will be able to access schools, health facilities, workplaces, shops, police stations, funerals, <i>etc;</i> during rainy periods.</p>		
iii.	Will the land use / development have any benefits for the local communities where it	YES√	NO

	will be located?		
iv.	<p>The proposed bridge will ensure access for Natalie community to the basic service facilities during the rainy periods. This bridge will form an integral part of the communities, specifically Sane and Natalie as it will be a safe, accessible connection point for the communities especially during peak rainfall periods. Natalie community including school children and workers will be able to access schools, health facilities, workplaces, shops, police stations, funerals, etc; during rainy periods.</p>		

10. 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:	Administering authority:	Date:
National Environmental Management Act, 1998 (Act No. 107 of 1998) as amended (NEMA)	Limpopo Economic Development, Environment and Tourism (LEDET)	19 November 1998
Environmental Impact Assessment (EIA) Regulations, 2014 as amended	LEDET	8 December 2014
National Water Act, 1998 (Act No. 36 of 1998) (NWA)	Department of Water and Sanitation (DWS)	20 August 1998
National Environmental Management Waste Act, 2008 (Act No. 59 of 2008) as amended (NEM: WA), National Norms and standards for the storage of waste (GNR.926 of 29 November 2013)	LEDET/ Department of Environment, Forestry and Fisheries (DEFF)	10 March 2009 29 November 2013
National Environmental Management: Biodiversity Act, 2004 (Act No 10 of 2004)	LEDET	7 June 2004
National Heritage Resources Act, 1999 (Act No. 25 of 1999) (NHRA)	The South African Heritage Resources Agency (SAHRA)	28 April 1999
Environmental Management Plans, Integrated Environmental Mnaangement, Information Series 12, Department of Environmental Affairs and Tourism	National and Provincial	2004

Occupational Health and Safety Act, 1993 (Act No. 85 of 1993)	Provincial Department of Labour	23 June 1993
Promotion of Access to Information Act, 2000 (Act No. 2 of 2000) (PAIA).	LEDET	9 March 2001
The Constitution of the Republic of South Africa, 1996 (Act No. 108 of 1996)	The Judiciary	18 December 1996
Applicable by-laws of Makhado Local Municipality	Makhado Local Municipality	-

11. Waste, Effluent, Emission and Noise Management

11(a) Solid waste management

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

YES <input checked="" type="checkbox"/>	NO <input type="checkbox"/>
~10m ³	

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

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

The waste will be stored temporarily at the camp site for the disposal at the nearest licensed municipal Waste Disposal facility.

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

The waste will be disposed off at the nearest licensed municipal Waste Disposal facility.

Will the activity produce solid waste during its operational phase?

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

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

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

Not applicable

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

The waste from the proposed bridge construction is anticipated to be building rubbles from construction and general waste (take-aways, food, etc.) from the camp site and will therefore feed into a municipal waste stream.

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 department 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 relevant legislation?

YES	NO✓
-----	-----

If yes, inform the department and request a change to an application for scoping and EIA.

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

YES	NO✓
-----	-----

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

11(b) Liquid effluent

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

YES	NO✓
-----	-----

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

m ³

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

Yes	NO✓
-----	-----

If yes, the applicant should consult with the Department 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?

YES	NO✓
-----	-----

If yes, provide the particulars of the facility:

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

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

Not applicable

11(c) Emissions into the atmosphere

Will the activity release emissions into the atmosphere?

YES	NO✓
-----	-----

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

YES	NO
-----	----

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

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

Only general nuisance elements such as dust and exhaust emissions will be relevant for the proposed development. Such general nuisance can be managed through standard mitigation and management measures as stipulated in the Environmental Management Programme (EMPr).

During the construction phase, dust and exhaust emissions from construction vehicles will be generated. However, watering will be used to suppress dust.

11(d) Generation of noise

Will the activity generate noise?

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

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

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

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

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

Noise generated will emerge from construction vehicles and will be limited to construction times. This will be in similar manner when the road users are utilising the existing bridge. It is anticipated that the other noise will be generated from the drilling into and blasting some hard rocks if required. However, should drilling and blasting be required, necessary communications or notifications will be made to the communities through ward councillor and Community Liaison Officer (CLO) sufficiently in advance.

Therefore, noise levels due to the proposed project will be negligible and limited to construction times, envisaged to be from 7:30am to 4:30pm.

12. Water Use

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

Municipal <input checked="" type="checkbox"/>	water board	groundwater	river, stream, dam or lake <input checked="" type="checkbox"/>	other	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:

1 000 Litres

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

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

If yes, please submit the necessary application to the Department of Water Affairs and attach proof thereof to this application if it has been submitted.

13. Energy Efficiency

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

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

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

Not Applicable

SECTION B: SITE/AREA/PROPERTY DESCRIPTION

Important notes:

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

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

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

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

YES	NO <input checked="" type="checkbox"/>
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If YES, please complete the form entitled "Details of specialist and declaration of interest" for each specialist thus appointed:

All specialist reports must be contained in **Appendix D**.

Property description/physical address:

Natalie 170 MT, Portion 0
Msekwa 194 MT, Portion 0

(Farm name, portion etc.) Where a large number of properties are involved (e.g. linear activities), please attach a full list to this application.

In instances where there is more than one town or district involved, please attach a list of towns or districts to this application.

Current land-use zoning:

Residential

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

Must a building plan be submitted to the local authority?

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

Locality map:

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 indication of the project site position as well as the positions of the alternative sites, if any;
- 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, minutes and seconds. The projection that must be used in all cases is the WGS84 spheroid in a national or local projection)

Refer to **Appendix A** for the locality map.

1. Gradient of the Site

Indicate the general gradient of the site.

Alternative S1:

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

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

Flat	1:50 – 1:20	1:20 – 1:15	1:15 – 1:10	1:10 – 1:7,5	1:7,5 – 1:5	Steeper than 1:5
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2. Location In Landscape

Indicate the landform(s) that best describes the site:

2.1 Ridgeline		2.6 Plain	
2.2 Plateau		2.7 Undulating plain / low hills	
2.3 Side slope of hill/mountain	√	2.8 Dune	
2.4 Closed valley		2.9 Seafront	
2.5 Open valley	√		

3. Groundwater, Soil and Geological Stability Of The Site

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

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

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

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

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

5. Land Use Character of Surrounding Area

Indicate land uses and/or prominent features that does 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:

5.1 Natural area	√	5.22 School	√
5.2 Low density residential	√	5.23 Tertiary education facility	
5.3 Medium density residential		5.24 Church	
5.4 High density residential		5.25 Old age home	
5.5 Medium industrial ^{AN}		5.26 Museum	
5.6 Office/consulting room		5.27 Historical building	
5.7 Military or police base/station/compound		5.28 Protected Area	
5.8 Spoil heap or slimes dam ^A		5.29 Sewage treatment plant ^A	
5.9 Light industrial		5.30 Train station or shunting yard ^N	
5.10 Heavy industrial ^{AN}		5.31 Railway line ^N	
5.11 Power station		5.32 Major road (4 lanes or more)	
5.12 Sport facilities		5.33 Airport ^N	
5.13 Golf course		5.34 Harbour	
5.14 Polo fields		5.35 Quarry, sand or borrow pit	
5.15 Filling station ^H		5.36 Hospital/medical centre	
5.16 Landfill or waste treatment site		5.37 River, stream or wetland	√
5.17 Plantation		5.38 Nature conservation area	
5.18 Agriculture	√	5.39 Mountain, koppie or ridge	√
5.19 Archaeological site		5.40 Graveyard	
5.20 Quarry, sand or borrow pit		5.41 River, stream or wetland	√
5.21 Dam or Reservoir		5.42 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?

Not Applicable

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

If YES, specify and explain:	Not Applicable
If NO, specify:	There are no industries in the area.

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

If YES, specify and explain:	Not Applicable
If NO, specify:	There are no filling stations in the area.

6. Cultural/Historical Features

Are there any signs of culturally or historically significant elements, as defined in section 2 of the National Heritage Resources Act, 1999, (Act No. 25 of 1999), including Archaeological or palaeontological sites, on or close (within 20m) to the site?	YES	NO [√]
	Uncertain	

If YES, explain: There is a royal burial site (in the mountain) approximately 1km further away from the proposed development.

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

Briefly explain the findings of the specialist:

Vhufa Hashu Heritage Consultants was appointed by Mamadi & Company SA (Pty) Ltd to conduct the Heritage Impact Assessment (HIA) Study (**Appendix D-2**) for the proposed bridge construction between Natalie and Sane villages. The findings and recommendations for the study are as follows:

- There are no archaeological or any other cultural heritage resources located within the direct path of the proposed bridge site.
- Given the spatial extent of the project activities, this study recommends that a cultural heritage resources – monitoring program be designed to deal with potential archaeological or historical finds, including unmarked human burials that may accidentally be found during development. This is particularly more important during earth moving activities.
- Should any archaeological or any other physical cultural resources be discovered subsurface during gravel extraction, heritage authorities should be informed.
- From an archaeological and cultural heritage resources perspective, there are no objections to the proposed project, and we recommend to the Provincial Heritage Resource Agency, South African Heritage Resource Agency to approve the project as planned.

Will any building or structure older than 60 years be affected in any way?	YES	NO [√]
Is it necessary to apply for a permit in terms of the National Heritage Resources Act, 1999 (Act 25 of 1999)?	YES	NO [√]

If yes, please submit or, make sure that the applicant or a specialist submits the necessary application to SAHRA or the relevant provincial heritage agency and attach proof thereof to this application if such application has been made.

SECTION C: PUBLIC PARTICIPATION

Public Participation Section to be updated in the Final Basic Assessment Report.

1. Advertisement

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

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

- (iii) any other disadvantage.

2. Content of Advertisements and Notices

A notice board, advertisement or notices must:

- (a) indicate the details of the application which is subjected to public participation; and
- (b) state—
 - (i) that the application has been submitted to the department in terms of these Regulations, as the case may be;
 - (ii) whether basic assessment or scoping procedures are being applied to the application, in the case of an application for environmental authorisation;
 - (iii) the nature and location of the activity to which the application relates;
 - (iv) where further information on the application or activity can be obtained; and
 - (v) the manner in which and the person to whom representations in respect of the application may be made.

3. Placement of Advertisements and Notices

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

Advertisements and notices must make provision for all alternatives.

4. Determination of Appropriate Measures

The practitioner must ensure that the public participation is adequate and must determine whether a public meeting or any other additional measure is appropriate or not based on the particular nature of each case. Special attention should be given to the involvement of local community structures such as Ward Committees, ratepayers associations and traditional authorities where appropriate. Please note that public concerns that emerge at a later stage that should have been addressed may cause the department to withdraw any authorisation it may have issued if it becomes apparent that the public participation process was inadequate.

5. Comments and Response Report

The practitioner must record all comments and respond to each comment of the public before the application is submitted. The comments and responses must be captured in a comments and response report as prescribed in these Regulations and be attached to this application. The comments and response report must be attached under **Appendix E**.

To be attached in the Final Basic Assessment Report.

6. Authority Participation

Please note that a complete list of all organs of state and or any other applicable authority with their contact details must be appended to the basic assessment report or scoping report, whichever is applicable.

Authorities are key interested and affected parties in each application and no decision on any application will be made before the relevant local authority is provided with the opportunity to give input.

Name of Authority informed:	Comments received (Yes or No)
To be updated in the Final Basic Assessment Report.	

7. Consultation with Other Stakeholders

Note that, for linear activities, or where deviation from the public participation requirements may be appropriate, the person conducting the public participation process may deviate from the requirements of that subregulation to the extent and in the manner as may be agreed to by the department.

Proof of any such agreement must be provided, where applicable.

Has any comment been received from stakeholders?

YES	NO <input checked="" type="checkbox"/>
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If "YES", briefly describe the feedback below (also attach copies of any correspondence to and from the stakeholders to this application):

To be updated in the Final Basic Assessment Report.

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. Issues Raised by Interested and Affected Parties

List the main issues raised by interested and affected parties.

No comment has been received to date.

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

No comment has been received to date.

2. Impacts That May Result from the Planning and Design, Construction, Operational, Decommissioning and Closure Phases As Well As Proposed Management of Identified Impacts and Proposed Mitigation Measures

List the potential direct, indirect and cumulative property/activity/design/technology/operational alternative related impacts (as appropriate) 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.

Please note that the impacts assessed below are applicable to Site Alternative 1 (preferred site) and Site Alternative 2, unless otherwise indicated. The methodology used to rate the impact significance and detailed impact assessment is provided in Appendix G-1.

Alternative (preferred alternative)

Table 1: Planning and Design Phase Impact Assessment

ENVIRONMENTAL IMPACT	Nature of Impact	ENVIRONMENTAL SIGNIFICANCE	
		Before Mitigation	After Mitigation
		Impact Significance	
1. Socio-Economic			
Appointment of construction contractor	Direct	Low (Positive)	Moderate (Positive)
Proposed Mitigation Measures: Ensure that skilled and unskilled labour required for the construction and installation of equipment are predominately South Africans from the surrounding communities where possible.			

Table 2: Construction Phase Impact Assessment

ENVIRONMENTAL IMPACT	Nature of Impact	ENVIRONMENTAL SIGNIFICANCE	
		Before Mitigation	After Mitigation
		Impact Significance	
1. Socio-Economic			
Creation of jobs	Direct	Low (Positive)	Moderate (Positive)
Employment of members of the local community will provide skills development which will improve the employability of these community members.	Direct	Low (Positive)	Moderate (Positive)
Proposed Mitigation Measures:			
<ul style="list-style-type: none"> - Ensure that both skilled and unskilled labour required for the construction and installation of equipment are predominately South Africans from the surrounding communities where possible. - Construction materials must be purchased and utilized locally where possible. - Adequate training to be provided to all local people employed from the surrounding communities. - Reference letters for employees must be provided at the completion of construction. 			

2. Dust			
Generation of dust from excavations, stockpiled soil and movement of construction vehicle can become a nuisance factor to the construction workers as well as nearby residents.	Direct	Moderate (Negative)	Low (Negative)
<p>Proposed Mitigation Measures:</p> <ul style="list-style-type: none"> - Use of Water sprays, especially on dry and windy days, on haul roads and where vegetation is being / has been cleared to suppress dust. - Dust nuisance Complaints should be recorded in the complaints register at the construction site. - Correct Personal Protective Equipment (PPE) including dust masks must be provided to the workers; - Covers construction materials during storage and transportation where possible; - Speed of the vehicles travelling to and from the site must be limited; and - Construction work must be paused during periods of strong winds if possible 			
3. Land/Soil			
Land/soil pollution from chemical / hydrocarbon spills, litter and waste metals from Transportation, handling, and storage of construction materials. Excavation for services and development footprint and hardening of surfaces.	Direct	Moderate (Negative)	Low (Negative)
<p>Proposed Mitigation Measures:</p> <ul style="list-style-type: none"> - Establish a chemical storage area that is suitably designed to contain all spills. - Ensure that hydrocarbons are stored in a bunded area with a capacity of 110% of storage volume. - Ensure that the bunded area is suitably designed to allow for cleaning and prevent spillage to the environment. - Ensure that all vehicles, storage, and usage areas have suitable spill kits. - Develop a chemical and hydrocarbon spill procedure. - Ensure that chemical and hydrocarbon usage is controlled. - No servicing of vehicles onsite. - Regular inspection and servicing of vehicles. - Develop a spill management procedure for vehicles that may leak accidentally. - Place a drip tray under the vehicles that may leak accidentally. - Ensure that concrete spills are cleaned up. 			

4. Surface water and Groundwater			
4.1. Pollution from transportation, handling, and storage of construction materials may enter groundwater and/or surface water.	Direct	Moderate (Negative)	Low (Negative)
<p>Proposed Mitigation Measures:</p> <ul style="list-style-type: none"> - Establish a chemical storage area that is suitably designed to contain all spills. - Ensure that hydrocarbons are stored in a bunded area with a capacity of 110% of storage volume. - Ensure that the bunded area is suitably designed to allow for cleaning and prevent spillage to the environment. - Ensure that all vehicles, storage, and usage areas have suitable spill kits. - Develop a chemical and hydrocarbon spill procedure. - Ensure that chemical and hydrocarbon usage is controlled. - No servicing of vehicles onsite. - Regular inspection and servicing of vehicles. - Develop a spill management procedure for vehicles that may leak accidentally. - All stationary machinery must be equipped with a drip tray to retain any oil leaks. - Ensure that concrete spills are cleaned up. - No concrete mixing must take place within 32 m of the riverbanks - No machinery must be parked overnight within 50 m of the rivers. - All work within the river should be completed during the dry season, when flows are at their lowest. - Water in the rivers must be allowed to pass downstream of the construction activity. If necessary, this should be achieved via a temporary diversion – this should not be in place for more than 30 days. - Ensure all mitigation measures or recommendations from the Department of Water and Sanitation (DWS) or Water Use Licence (if available) are adhered to. 			
4.2. Impact on surface water quality	Direct	Moderate (Negative)	Low (Negative)
<p>Proposed Mitigation Measures:</p> <ul style="list-style-type: none"> - Provision of adequate sanitation facilities located outside of the watercourse or its associated buffer zone. - Implementation of appropriate stormwater management around the excavation to prevent the ingress of run-off into the excavation and to prevent contaminated runoff into the watercourse. - Provision of adequate sanitation facilities located outside of the watercourse area or its associated buffer zone - The development footprint must be fenced off from the watercourses and no related impacts 			

may be allowed into the watercourse e.g. water runoff from cleaning of equipment, vehicle access etc.

- After construction, the land must be cleared of rubbish, surplus materials, and equipment, and all parts of the land shall be left in a condition as close as possible to that prior to use.
- Maintenance of construction vehicles / equipment should not take place within the watercourse or watercourse buffer.
- Control of waste discharges
- Maintenance of buffer zones to trap sediments with associated toxins
- Ensure that no operational activities impact on the watercourse or buffer area. This includes edge effects.
- Control of waste discharges and do not allow dirty water from operational activities to enter the watercourse
- Ensure that no operational activities impact on the watercourse or buffer area. This includes edge effects.
- Regular independent water quality monitoring should form part of operational procedures in order to identify pollution
- Treatment of pollution identified should be prioritized accordingly.
- Ensure all mitigation measures or recommendations from the Department of Water and Sanitation (DWS) or Water Use Licence (if available) are adhered to.

4.3. Soil erosion, sedimentation and siltation	Direct	Moderate (Negative)	Low (Negative)
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Proposed Mitigation Measures:

- Consider the various methods and equipment available and select whichever method(s) that will have the least impact on watercourses.
- Water may seep into trenching and earthworks. It is likely that water will be contaminated within these earthworks and should thus be cleaned or dissipated into a structure that allows for additional sediment input and slows down the velocity of the water thus reducing the risk of erosion. Effective sediment traps should be installed.
- Construction in and around watercourses must be restricted to the dryer winter months where possible.
- Retain vegetation and soil in position for as long as possible, removing it immediately ahead of construction / earthworks in that area (DWAf, 2005).
- Remove only the vegetation where essential for construction and do not allow any disturbance to the adjoining natural vegetation cover.
- Rehabilitation plans must be submitted and approved for rehabilitation of damage during construction and that plan must be implemented immediately upon completion of construction.

- Cordon off areas that are under rehabilitation as no-go areas using danger tape and steel droppers. If necessary, these areas should be fenced off to prevent vehicular, pedestrian and livestock access.
- During the construction phase measures must be put in place to control the flow of excess water so that it does not impact on the surface vegetation.
- Protect all areas susceptible to erosion and ensure that there is no undue soil erosion resultant from activities within and adjacent to the construction camp and work areas.
- Runoff from the construction area must be managed to avoid erosion and pollution problems.
- Implementation of best management practices
- Monitoring should be done to ensure that sediment pollution is timeously addressed.
- Flood attenuation and stormwater management plans must be drawn up by a qualified engineer.
- No construction material must be stored within 50 m of a watercourse.
- Stockpiles within 100 m of a watercourse must be monitored for erosion and mobilisation of materials towards watercourses. If this is noted by an ECO, suitable cut-off drains, or berms must be placed between the stockpile area and the nearest watercourse.

4.4. Changes in hydrological regime

Direct

Moderate (Negative)

Low (Negative)

Proposed Mitigation Measures:

- Construction must be restricted to the drier winter months.
- A temporary fence or demarcation must be erected around No-Go Areas outside the proposed works area prior to any construction taking place as part of the contractor planning phase when compiling work method statements to prevent access to the adjacent portions of the watercourse.
- Effective stormwater management should be a priority during both construction and operational phase. This should be monitored as part of the EMP.
- High energy stormwater input into the watercourses should be prevented at all cost. Changes to natural flow of water (surface water as well as water flowing within the soil profile) should be taken into account during the design phase and mitigated effectively.

5. Ecology

Loss of biodiversity

Direct

Moderate (Negative)

Low (Negative)

Proposed Mitigation Measures:			
<ul style="list-style-type: none"> - Planning of the construction site must include eventual rehabilitation / restoration of indigenous vegetative cover - Alien plant eradication and follow-up control activities prior to construction, to prevent spread into disturbed soils, as well as follow-up control during construction - The amount of vegetation removed should be limited - Retain vegetation and soil in position for as long as possible, removing it immediately ahead of construction / earthworks in that area and returning it where possible afterwards. - Monitor the establishment of alien invasive species within the areas affected by the construction and maintenance and take immediate corrective action where invasive species are observed to establish. - A temporary fence or demarcation must be erected around the works area to prevent access to sensitive environs. The works areas generally include the servitude, construction camps, areas where material is stored and the actual footprint of the infrastructure 			
6. Air quality			
Impact on air quality due to unauthorised activities on site	Direct	Low (Negative)	Low (Negative)
Proposed Mitigation Measures:			
<ul style="list-style-type: none"> - No burning of refuse is permitted on site. - When operation machinery and vehicles are noticed to release black soot in their tailpipes they should be taken for maintenance. 			
7. Noise			
Increased noise levels due to construction equipment, the workers as well as the construction vehicles both on site as well as during travel to and from the site, may cause a disturbance to nearby receptors. Potential receptor sites include the residential areas around the site.	Direct	Moderate (Negative)	Low (Negative)
Proposed Mitigation Measures:			
<ul style="list-style-type: none"> - Work must be restricted to daylight hours (7am to 5pm); - All construction vehicles and equipment must be properly serviced in order to meet the necessary noise level requirements; - Adhere to Makhado Local Municipality and/or the Vhembe District Municipality by-laws 			

regarding noise if available.			
8. Cultural heritage			
Impact on cultural/heritage remains/value due to excavations	Direct	Moderate (Negative)	Low (Negative)
Proposed Mitigation Measures: <ul style="list-style-type: none"> - should any archaeological or any other physical cultural resources be discovered subsurface or surface during construction, the appointed Environmental Control Officer (ECO) responsible for the development and/or heritage authorities should be informed; and - Such discoveries ought to be protected (preferably in situ) and the ECO should alert SAHRA (South African Heritage Research Agency) so that appropriate mitigation (e.g. recording, sampling or collection) can be taken. 			
9. Waste			
Generation of construction waste such as building rubble, excess concrete and general waste created by workers. An inappropriate disposal of construction waste can result in the pollution of sensitive environments.	Direct	Moderate (Negative)	Low (Negative)
Proposed mitigation measures: <ul style="list-style-type: none"> - Concrete and rubble must be reused and/or recycled where possible; - Waste bins must be clearly marked and stored at the designated area on site. - Waste that cannot be reused or recycled must be disposed of in the correct manner at the nearest registered waste disposal site; - Ensure litter is cleared regularly to designated waste areas. - Any hazardous materials (e.g. fuel or oil) must be store on marked hazardous waste containers for safe disposal or collection by hazardous waste service providers; - General good house-keeping must be practiced on site. - An environmental management programme incorporating waste management issues during the construction phase of the project has been developed and must be implemented; and - A post-construction audit conducted by an independent ECO must be conducted to ensure compliance with this mitigation. 			
10. Traffic			
Vehicle traffic congestion due to transportation, handling, and storage of construction materials	Direct	Low (Negative)	Low (Negative)
Proposed Mitigation Measures:			

- Ensure that proper road signage is used.
- Limit access to the construction site to construction vehicles only.

Table 3: Operational Phase Impact Assessment

ENVIRONMENTAL IMPACT	Nature of Impact	ENVIRONMENTAL SIGNIFICANCE	
		Before Mitigation	After Mitigation
		Impact Significance	
1. Socio-Economic			
1.1.Improvement on livelihood of the local communities. The provision of the proposed pedestrian bridges will enable workers to go to work, funerals to take place, other service deliveries and pupils to attend school during flooding or periods of high river levels.	Indirect	High (Positive)	High (Positive)
Proposed Mitigation Measures: No mitigation measure proposed.			
1.2.The bridges will provide a much safer access route for residents, especially children, who wish to cross the Mufungudi river during periods of high water levels.	Direct	High (Positive)	High (Positive)
Proposed Mitigation Measures:			
<ul style="list-style-type: none"> - Barriers must be placed along the sides of the bridges; and - Continued maintenance of pedestrian bridges especially following a flooding event must take place; 			
2. Visual			
The proposed pedestrian bridges will become a permanent fixture within the area and will change the appearance of the otherwise natural landscape. The bridges will	Direct	Moderate (Negative)	Low (Negative)

<p>be located in a relatively low-lying area which will be visible from either side of the surrounding valley slopes.</p>			
<p>Proposed Mitigation Measures:</p> <ul style="list-style-type: none"> - Regular maintenance and upkeep (e.g. painting) must be conducted in order to ensure that the bridge does not become blemished. 			
<p>4. Surface water and Groundwater</p>			
<p>Increased erosion and sedimentation into the river may occur if poor rehabilitation / re-vegetation is undertaken post construction. Erosion and sedimentation may also occur as a result of poor slope stabilisation.</p>	<p>Direct</p>	<p>Moderate (Negative)</p>	<p>Low (Negative)</p>
<p>Proposed Mitigation Measures:</p> <ul style="list-style-type: none"> - Riverbanks must be rehabilitated, including re-establishment of vegetation cover; - Continued maintenance of pedestrian bridges especially following a flooding event must take place; - Residents must be encouraged to use the pedestrian bridges in favour of crossing the rivers via the riverbanks; and - Areas along the riverbank which were previously affected by erosion should be rehabilitated with indigenous vegetation where possible. 			
<p>5. Compliance</p>			
<p>Failure to implement the operational requirements as stipulated in the Environmental Authorisation (should it be granted) and any other permits/licenses that may be issued could result in the failure of the project and could negatively impact the surrounding environment.</p>	<p>Indirect</p>	<p>Moderate (Negative)</p>	<p>Low (Negative)</p>
<p>Proposed Mitigation Measures:</p>			

- All relevant legislation and policy must be consulted, and the proponent must ensure that the project is compliant with such legislation and policy. These should include (but are not restricted to): NEMA, NWA, Local and District Spatial Development Frameworks, Limpopo Biodiversity Conservation Plan (LBCP), Local Municipal bylaws.

Table 4: Decommissioning and Closure Phase Impact Assessment

ENVIRONMENTAL IMPACT	Nature of Impact	ENVIRONMENTAL SIGNIFICANCE	
		Before Mitigation	After Mitigation
		Impact Significant	
Due to the nature of the proposed development, decommissioning phase is not envisioned. The development is permanent and will not be decommissioned. Only the construction site at the end of the construction period will need decommissioning and rehabilitation. As a result, impact assessments for the decommissioning activities are not considered in this assessment.			

Table 5: Impact Assessment for No-Go Option

ENVIRONMENTAL IMPACT	Nature of Impact	ENVIRONMENTAL SIGNIFICANCE	
		Before Mitigation	After Mitigation
		Impact Significance	
1. Socio-Economic / Project does not proceed			
No opportunity for contributing to the local infrastructural development and improvement on livelihood of the local communities.	Direct	High (Negative)	High (Positive)
Proposed Mitigation Measures:			
- Authorise and implement the proposed project activities.			
2. Environment / Project does not proceed			
Impacts on the environment	Direct	Moderate (Negative)	Moderate (Negative)
Proposed Mitigation Measures:			
- Authorise and implement the proposed project activities and recommended mitigation measures.			

3. ENVIRONMENTAL IMPACT STATEMENT

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

Alternative A (preferred alternative)

The site is currently impacted by agricultural activities taking place along Mufungude river. In addition, the proposed site is located in an area where the old bridge (which have collapsed) was located.

The proposed development (bridge construction) will take place within the watercourse. NO culturally and heritage significance elements have been observed within the direct path of the proposed activity's location (Refer to Heritage Impact Assessment study in **Appendix D-2**).

The area is covered by the Soutpansberg Mountain Bushveld. According to NEMBA, the conservation status of Soutpansberg Mountain Bushveld is classified as Vulnerable with 24% target for conservation. However, the site is greatly altered due to agricultural activities occurring along Mufungude river as well as nearby residential development. According to the Limpopo Conservation plan, the site is located within Critical Biodiversity Area 1 and an Ecological Support Area is located approximately 500 metres from the site. However, cultivation and overgrazing at alternative 1 (preferred site) is higher than at alternative 2, subsequently decreasing the amount of habitat available for vegetation. Although the vegetation is no different to alternative 2, more of plantations (*Zea mays* and *Mangifera indica*) have been recorded in high number on the outside riparian areas. There were several sedges present in the marginal zone. The non-marginal zone included the pioneer grass species *Cynodon dactylon*. The tree layer present in the non-marginal zone contained the *Searsia lancea*, *Senna petersiana*, *Ficus sycomorus* and *Vachellia karroo* (refer to Wetland and Ecological Impact Assessment study in **Appendix D-1**).

The proposed development has considered two (2) site alternatives, *i.e.* Alternative 1 (preferred site) and Alternative 2. Alternative 1 (preferred site) has been considered to be the most suitable site due to the following reasons:

- At alternative 1 (preferred site), there is already an existing road that is used by both cars as well as pedestrians, which will result in limited removal of vegetation as the area is already disturbed,
- There are already disturbances on the water resources due to the surrounding farming, livestock grazing, settlements and old bridge construction (but have collapsed) around alternative 1 (preferred site) than alternative 2.
- The preferred site is located within the closest proximity to the Sane Primary School when compared to site Alternative 2.
- During the ecological assessment, it was evident that alternative 1 (preferred site) has less number of macroinvertebrates as well as Riparian Vegetation Response Assessment Index (VEGRAI) when compared to site Alternative 2.

Construction Phase:

The construction activities will have a MODERATE to LOW negative impact on the receiving environment prior to the implementation of mitigation measures. The main reason for rating construction activities with MODERATE to LOW is that the project area has been disturbed due to number of anthropogenic activities. The elements of the environment most affected will be the soils, the social environment (traffic and particulate emissions), biodiversity, surface water and potentially groundwater.

The impacts will be predominantly limited to the site and study area. The impacts will also act for the time of construction phase, which is approximately 10 months. All of the impacts identified during the construction phase can be mitigated to acceptable limits and the majority of the impacts showed a MODERATE to LOW significance before and after mitigation measures are implemented. Construction for the proposed bridge is therefore not likely to significantly impact on the already disturbed areas.

Operational Phase:

Impacts identified for the operational phase of the proposed bridge construction are largely rated MODERATE to LOW negative impact on the receiving environment. The proposed development and the associated infrastructures will provide access to services in the other side of the river such as schooling for pupil during rainy periods, which will in turn improve the livelihoods of the local community as well as the local infrastructural development. For this reason, this was rated as HIGH positive impact.

The elements of the environment most affected will be the surface water and soils particularly during maintenance of the proposed development's facilities, and potentially groundwater (vehicle spillage during equipment maintenance). Noise impacts will be predominantly limited to the site. The impacts associated with the operational phase will mostly occur during the maintenance of the infrastructures for as long as the development is operational.

As part of the mitigation measures, monitoring and all measures recommended in the in the EMPr attached hereto as **Appendix F** should be adhered to.

Decommissioning Phase:

It is not envisaged that the proposed development/activities will be decommissioned as it provides safe access and link between the surrounding communities.

Decommissioning phase activities associated with the decommissioning of the construction site will involve the reversal of installation of the construction phase plant and structures. The end result of the decommissioning phase will be a positive impact on the environment. However, during the decommissioning phase similar nuisance impacts such as noise, traffic will be experienced. These too can be mitigated.

Overall, the impact of the proposed activity is expected to be MODERATE to LOW as the study site is already disturbed by the surrounding activities and land use. NO impacts were identified that could not be adequately mitigated to a low significance rating. With mitigation measures in place, there are a number of significantly positive impacts which would result from the proposed development. Therefore, the proposed development's

activities will be mitigated to acceptable levels.

No-go alternative (compulsory)

The 'No-Go' alternative refers to not implementing any of the proposed project activities described in this report. The option of not proceeding with the proposed project will result in the continuation of the status quo and denied opportunity to provide safe access to services to the local community during rainy periods, local infrastructure development as well as changes to the local communities in terms of employment (temporary). All impacts on the receiving environment that likely to result during the Construction and Operational Phases of the proposed project will not transpire.

In terms of the environmental impacts, the current environmental status quo will remain the same. Impacts associated with the No-Go alternative (status quo remaining unchanged) are thus rated as HIGH and MODERATE.

Alternative B

Based on the impact assessment, the environmental significance of site Alternative 2 (Alternative B) will not differ much from the impact assessment for site Alternative 1 (preferred site) as described above. However, site Alternative 1 (preferred site) was considered most suitable due to the following reasons:

- At alternative 1 (preferred site), there is already an existing road that is used by both cars as well as pedestrians, which will result in limited removal of vegetation as the area is already disturbed,
- There are already disturbances on the water resources due to the surrounding farming, livestock grazing, settlements and old bridge construction (but have collapsed) around alternative 1 (preferred site) than alternative 2.
- The preferred site is located within the closest proximity to the Sane Primary School when compared to site Alternative 2.
- During the ecological assessment, it was evident that alternative 1 (preferred site) has less number of macroinvertebrates as well as VEGRAI when compared to site Alternative 2.

Alternative C

N/A

For more alternatives please continue as alternative D, E, etc.

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)?

YES ✓	NO
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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 department in respect of the application:

The EAP recommends that the proposed bridge construction be authorised at the proposed preferred site location. All mitigation measures listed by the Heritage and Ecological (including wetland) specialists in their specialist reports (**Appendix D-1 and D-2** respectively) and proposed in the Environmental Management Programme (EMPr) must be implemented. Generic rehabilitation plan as outlined in the Ecological Impact Assessment Specialist Report (**Appendix D-1**) should also be considered.

In addition, a storm water management plan for the development site including the stormwater attenuation must be developed according to the recommended principles and submitted to the relevant department at Makhado Local Municipality and DWS (if required) prior construction begins to obtain the necessary approvals.

Is an EMPr attached?

The EMPr must be attached as **Appendix F**.

YES ✓	NO
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Refer to **Appendix F** for the EMPr.

SECTION F: APPENDIXES

The following appendixes must be attached as appropriate:

Appendix A: Site plan(s)

Appendix A1 – Layout Map
Appendix A2 – Locality Map
Appendix A3 – Sensitivity Map
Appendix A4 – Topography Map
Appendix A5 – Geology Map
Appendix A6 – Soil Map
Appendix A7 – Agriculture Map
Appendix A8 – Land cover Map
Appendix A9 – Vegetation Types Map
Appendix A10 – Vegetation Conservation Status Map

Appendix B: Photographs

Appendix C: Facility illustration(s)

Appendix D: Specialist reports

Appendix D-1: Wetland and Ecological Impact Assessment Specialist Report
Appendix D-2: Heritage Impact Assessment Specialist Report
Appendix D-3: Geotechnical Investigation Report

Appendix E: Comments and responses report

To be attached in the Final Basic Assessment Report

Appendix F: Environmental Management Programme (EMPr)

Appendix G: Other information

Appendix G-1: Details of Impact Assessment and Methodology

SECTION G: DECLARATION BY THE ENVIRONMENTAL ASSESSMENT PRACTITIONER

I, Virginia Ramakuwela declare that I –

- (a) act as the independent environmental practitioner in this application;
- (b) do not have and will not have any financial interest in the undertaking of the activity, other than remuneration for work performed in terms of the Environmental Impact Assessment Regulations, 2014;
- (c) do not have and will not have a vested interest in the proposed activity proceeding;
- (d) have no, and will not engage in, conflicting interests in the undertaking of the activity;
- (e) undertake to disclose, to the competent authority, any material information that has or may have the potential to influence the decision of the competent authority or the objectivity of any report, plan or document required in terms of the Environmental Impact Assessment Regulations, 2006;
- (f) will ensure that information containing all relevant facts in respect of the application is distributed or made available to interested and affected parties and the public and that participation by interested and affected parties is facilitated in such a manner that all interested and affected parties will be provided with a reasonable opportunity to participate and to provide comments on documents that are produced to support the application;
- (g) will ensure that the comments of all interested and affected parties are considered and recorded in reports that are submitted to the Department in respect of the application, provided that comments that are made by interested and affected parties in respect of a final report that will be submitted to the Department may be attached to the report without further amendment to the report;
- (h) will keep a register of all interested and affected parties that participated in a public participation process; and
- (i) will provide the Department with access to all information at my disposal regarding the application, whether such information is favourable to the applicant or not.



Signature of the Environmental Assessment Practitioner:

Mamadi and Company SA (Pty) Ltd

Name of company:

30 October 2020

Date: