

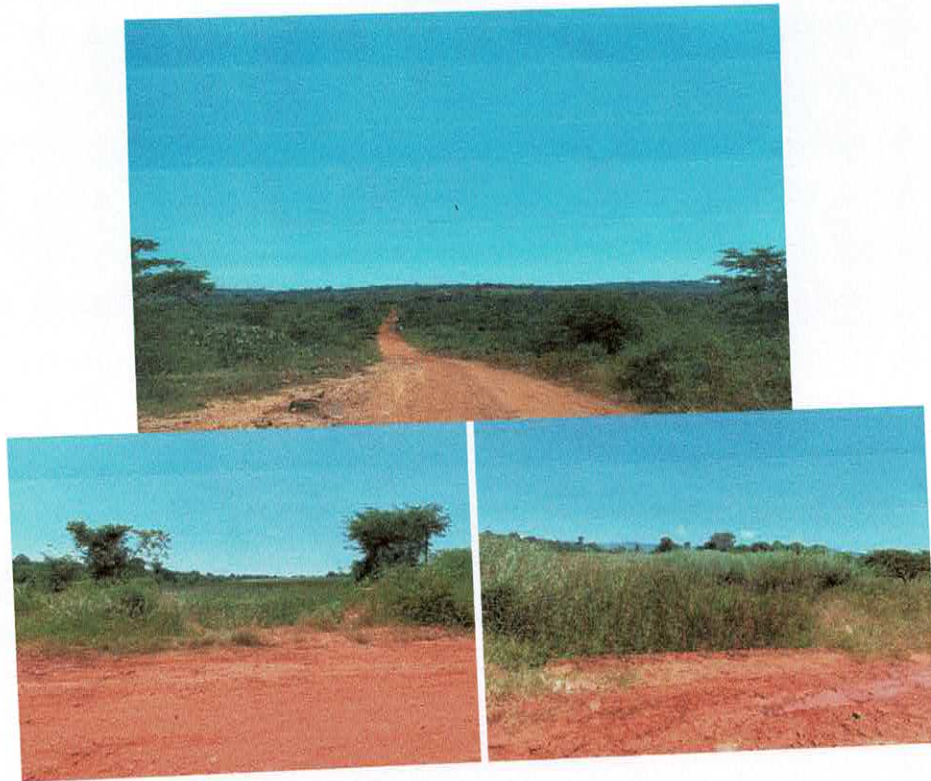
UNIVERSITY OF VENDA

FINAL BASIC ASSESSMENT REPORT - EIA REGULATIONS, 2014 (BAR) FOR THE PROPOSED
UPGRADING OF UNIVERSITY OF VENDA ACCESS ROAD FROM R524 AND A BRIDGE IN
THULAMELA LOCAL MUNICIPALITY OF VHEMBE DISTRICT, LIMPOPO PROVINCE

LEDET REF. 12/1/9/3-V49

REPORT NO. MGEC/UN-EA-THU19/2 Rev.4

JANUARY 2020



COMPILED BY



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DEPARTMENT OF ECONOMIC DEVELOPMENT,
ENVIRONMENT AND TOURISM

HEAD OFFICE
ENVIRONMENTAL IMPACT MANAGEMENT

03-02-2020

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P.O. BOX 55464, POLOKWANE, 0700
LIMPOPO PROVINCE

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PREPARED BY: MAWEDZA GEO-ENVIRONMENTAL CONSULTING (PTY) LTD

DOCUMENT ISSUE STATUS

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TITLE	FINAL BASIC ASSESSMENT REPORT - EIA REGULATIONS, 2014 (BAR) FOR THE PROPOSED UPGRADING OF UNIVERSITY OF VENDA ACCESS ROAD FROM R524 AND A BRIDGE IN THULAMELA LOCAL MUNICIPALITY OF VHEMBE DISTRICT, LIMPOPO PROVINCE
REFERENCE NO.	MGEC/UN-EA-THU19/2 Rev.4
AUTHOR	PRUDENCE NDOU (PR.SCI.NAT)

EXECUTIVE SUMMARY

Project Overview

University of Venda proposes to upgrade 1.6km access gravel road (of which 500m portion of the road has been issued with the EA) to tar from R524 to the University campus and a new bridge. Project location, road start 22°59'6.23"S and 30°26'39.06"E, road end 22°58'41.04"S and 30°26'23.08"E, bridge location 22°59'0.53"S and 30°26'36.37"E. This application is for the 1.1km portion of the road which required EA. The project is located on portion 0 of the farm Beuster 253 MT and Palmaryville 254 MT within Thulamela local Municipality in the Limpopo Province. The proposed project is located 2 km west of Thohoyandou town. The proposed road upgrade will run parallel to the existing alignment but within the existing road reserve due to the existing services closer to the current alignment which is not to any geometrical standard. If the current road alignment is not improved with the proposed alignment it will cause safety and drainage issues.

The Applicant also intends to continue using the existing gravel access road for future University developments. The proposed road and bridge will cross over Mvudi river which is within a wetland.

The proposed development requires Environmental Authorisation in terms of NEMA EIA Regulations 2014 and Water Use License in terms of the National Water Act.

Mawedza Geo-Environmental Consulting has been appointed as an Independent Environmental Assessment Practitioner by Nyeleti Consulting on behalf of the University of Venda to undertake Environmental Authorisation and Water Use License application process for the proposed project.

Environmental Process

The proposed development will trigger Listing Notice 1 Activity 12, 19 and 27 and Listing Notice 3 Activity 12 and 14 in terms of the Environmental Impact Assessment Regulation 2014 and Water Use License in terms of Section 21 (a), (c) and (i) of the National Water Act.

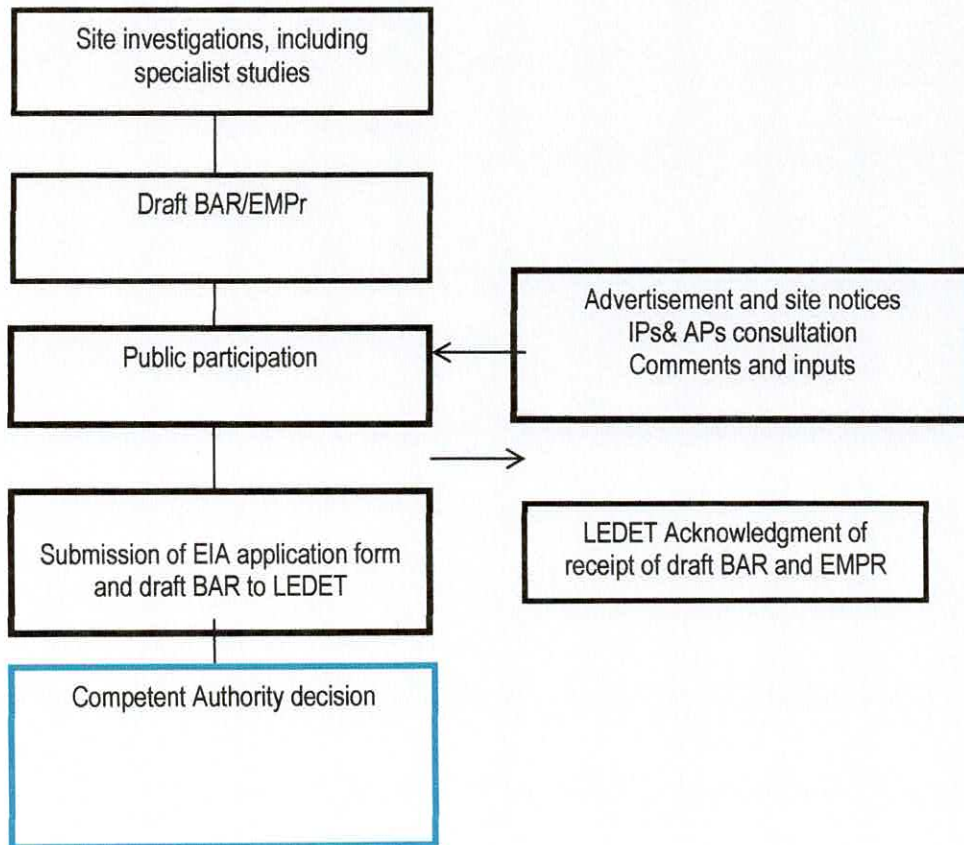


Figure 1. Process to date

The following specialist studies were undertaken to determine potential risk and impacts associated with the proposed development:

- Ecological assessment
- Heritage impact assessment
- Geotechnical studies

The project was advertised in the Daily Sun newspaper dated 09/05/2019 and 4 site notices were placed in the vicinity of the proposed project area. A consultation meeting took place on the 21/06/2019 at the University of Venda

Interested and affected parties (I&APs) were afforded an opportunity to provide inputs and comments on the proposed project for a period of 30 days. Comments received during public consultation period are included in this report.

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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:

12/1/9/3-V49

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.

Cnr Suid & Dorp Streets, POLOKWANE, 0700, P O Box 55464, POLOKWANE, 0700
Tel: 015 290 7138/ 7167, Fax: 015 295 5015, website: <http://www.ledet.gov.za>

The heartland of southern Africa – development is about people!

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>Postal Address:</p> <p>Central Administration Office Environmental Impact Management P. O. Box 55464 POLOKWANE 0700</p>	<p>Physical Address:</p> <p>Central Administration Office Environmental Affairs Building Cnr Suid and Dorp Streets POLOKWANE 0699</p>
<p>Queries should be directed to the Central Administration Office: Environmental Impact Management:-</p> <p>For attention: Mr E. V. Maluleke</p> <p>Tel: (015) 290 7138/ (015) 290 7167</p> <p>Fax: (015) 295 5015</p> <p>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?

	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.

1. ACTIVITY DESCRIPTION

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

Proposed project includes upgrading of 1.6km access gravel road from R524 to the University of Venda campus and a new bridge in Thulamela Local Municipality of Vhembe District, Limpopo Province. Only 1.1km portion of the road requires EA. The remaining 500m was authorized in 2015.

The proposed development includes road alignment which will be undertaken parallel to existing route but within the road reserve

- Approx. 500m long dual carriageway from R524 traffic circle tying on the existing university construction access road outside the boundary inclusive of a new traffic circle entering the university and a partial road towards the new student development on the west along the R524
- New university gate
- Approx. 600m of dual carriageway within the university boundary
- Approx. 500m of single carriageway beyond the bridge up to the Health science building with traffic circle leading to agricultural section and planned future developments.
- New bridge over Mvudi River (width=21.8m, height=3.585 measured from top of pile cap to soffit. Height from pile cap to top of tower or pylon is 14.3m and 39.45m long including approach slabs)
- Culvert (width=1.8m internal, **2.4m** incl. side walls, height= 1.5m internal, **2,2m** from below base slab to top slab which 30.282m long) and other storm water measures
- A combination of asphalt and interlocking paving bricks (mainly from the new future gate up to the bridge)
- Installation of new street lighting, 1.5m wide sidewalks on both sides, road signs, road markings and supporting ancillary works.

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.
LEDET BA Report, EIA 2014: Project Name: Upgrading of the University of Venda access road from R524 and a bridge in Thulamela Local Municipality of Vhembe District, January 2020 - 9

It is estimated that an area of 37834.437m² of land will be disturbed by the proposed development, with 309.367m³ of sand/soil excavated from the river during construction of the bridge
An estimated 9581.621 m³ of water will be required for construction purposes. The applicant intend to abstract water for construction from Mvudi River where the bridge will be located.

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.

Property/Location Alternative (Preferred alternative)

There is only one preferred location for the proposed development, which entails upgrading and alignment of the existing road within the road reserve and construction of the new bridge in line with the new road alignment.

The proposed access road will run parallel to the existing road but within the road reserve to avoid the existing services such a water mains, electricity and MTN which are very close to the existing alignment.

The existing road alignment over the existing structure is also not to any geometrical standard. If the road alignment is not improved with the proposed alignment it will cause safety issues and drainage issues.

The Applicant intends to continue utilizing the existing gravel road for construction activities as the University is still being developed. The construction plant will not be able to use the new proposed road as it will be detrimental to the lifespan of the road. The new bridge will also be aligned to the proposed road alignment.

THE PROPOSED UPGRADING OF UNIVERSITY OF VENDA ACCESS ROAD FROM R524 IN THULAMELA LOCAL MUNICIPALITY, LIMPOPO PROVINCE

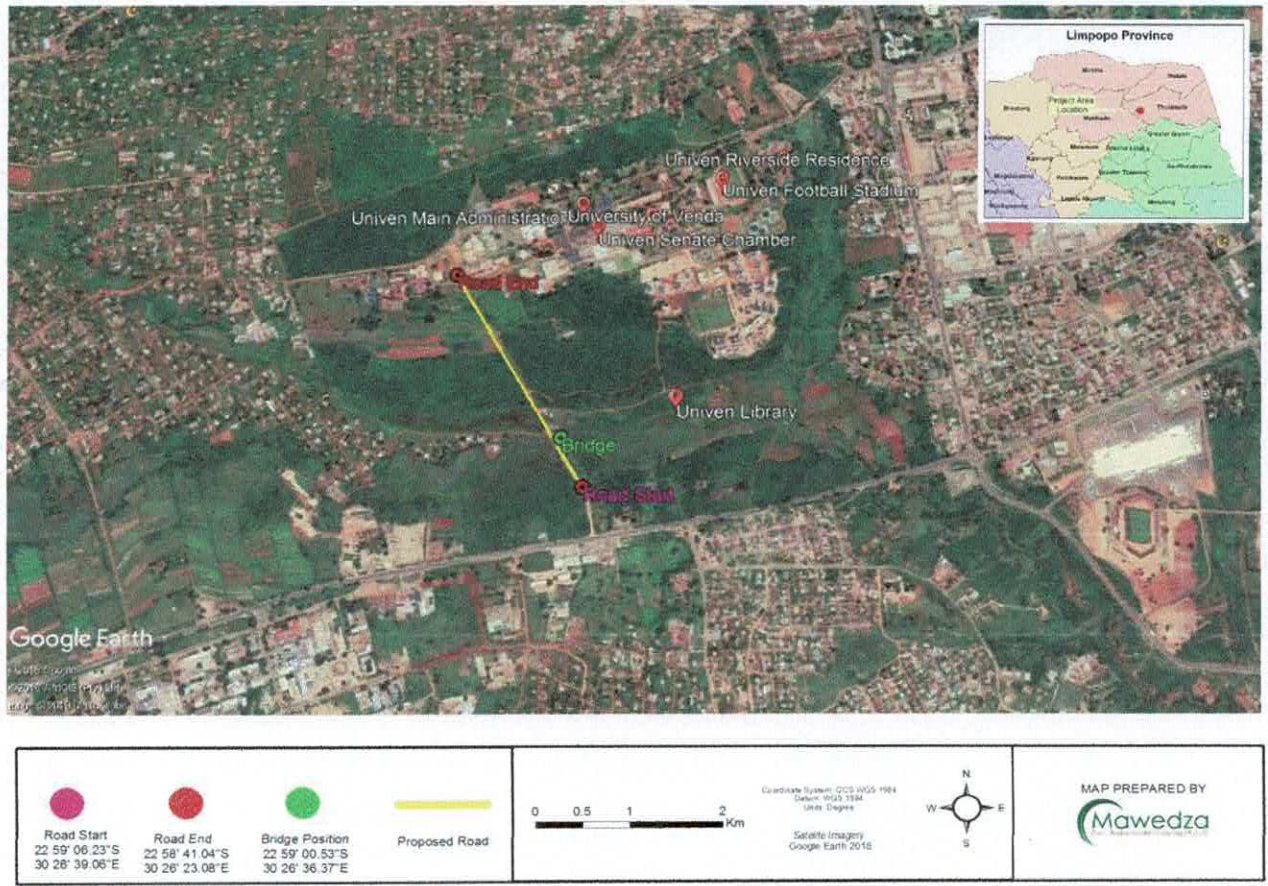


Figure 2. Locality map of the proposed project

Activity Alternative (Preferred alternative)

- There is only one preferred activity alternative. The proposed project entails upgrading of the existing gravel road to tar parallel the existing infrastructure but within the road reserve and a new bridge. The existing road is in poor condition and slippery during rainy periods.
- The existing road alignment over the existing structure is also not to any geometrical standard. If the road alignment is not improved with the proposed alignment it will cause safety issues and drainage issues.
- The proposed development is in the best interest of the University community. The development will improve the road condition and accessibility by the University community. The University intend to make the proposed road the main entrance to the University due to traffic on the current entrance. The current gravel road will continue to be utilized for future University developments to avoid impacts of heavy construction vehicles and machineries on the proposed road and also inconveniences on the new University main entrance

- The current culverts structure is not well designed and totally insufficient for a long term (all weather bridge) design. The current structure will only be able to handle a maximum flood return of approx. 5 years. If we stay within these criteria, the possibility of overtopping and flooding in future is very high risk. The inlet of one of the culvert structure is already clogged and overgrown. If a high flood is experienced, flooding of the road and adjacent properties might occur.
- The new proposed bridge, with higher and fewer openings, will also assist with the river flow through the structure. This will also prevent the river from clogging-up, damming-up, changing flow direction or causing possible flooding

Activity Layout (Preferred alternative)

There is one preferred alternative activity layout for this development as per the Applicant requirements. The proposed development includes road alignment which will be undertaken outside the existing route but within the road reserve. The proposed upgrade will run parallel to the existing gravel access road since the existing alignment is very close to services.

- Approx.500m long dual carriageway from R524 traffic circle tying on the existing university construction access road outside the boundary inclusive of a new traffic circle entering the university and a partial road towards the new student development on the west along the R524
- New university gate
- Approx. 600m of dual carriageway within the university boundary
- Approx. 500m of single carriageway beyond the bridge up to the Health science building with traffic circle leading to agricultural section and planned future developments.
- New bridge over Mvudi river. The new bridge will be constructed as per the road layout. The new proposed design of the bridge has taken into account measures to minimize the impact on watercourse. The bridge design proposal is a shorter bridge with higher and fewer openings which will also assist with the river flow through the structure. This will also prevent the river from clogging-up, damming-up, changing flow direction or causing possible flooding.
- A culvert and storm water measures along the road

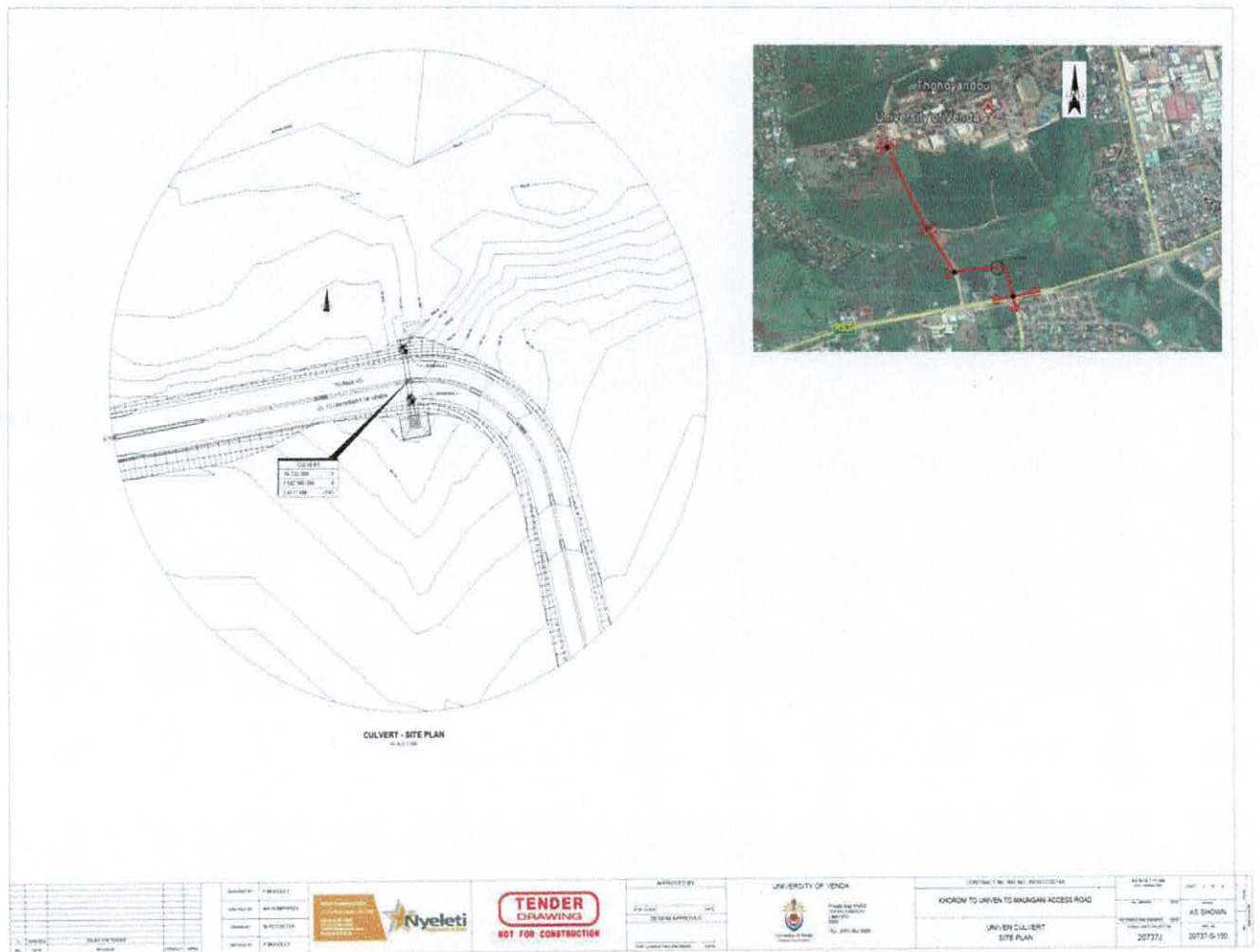


Figure 3. Road layout 1

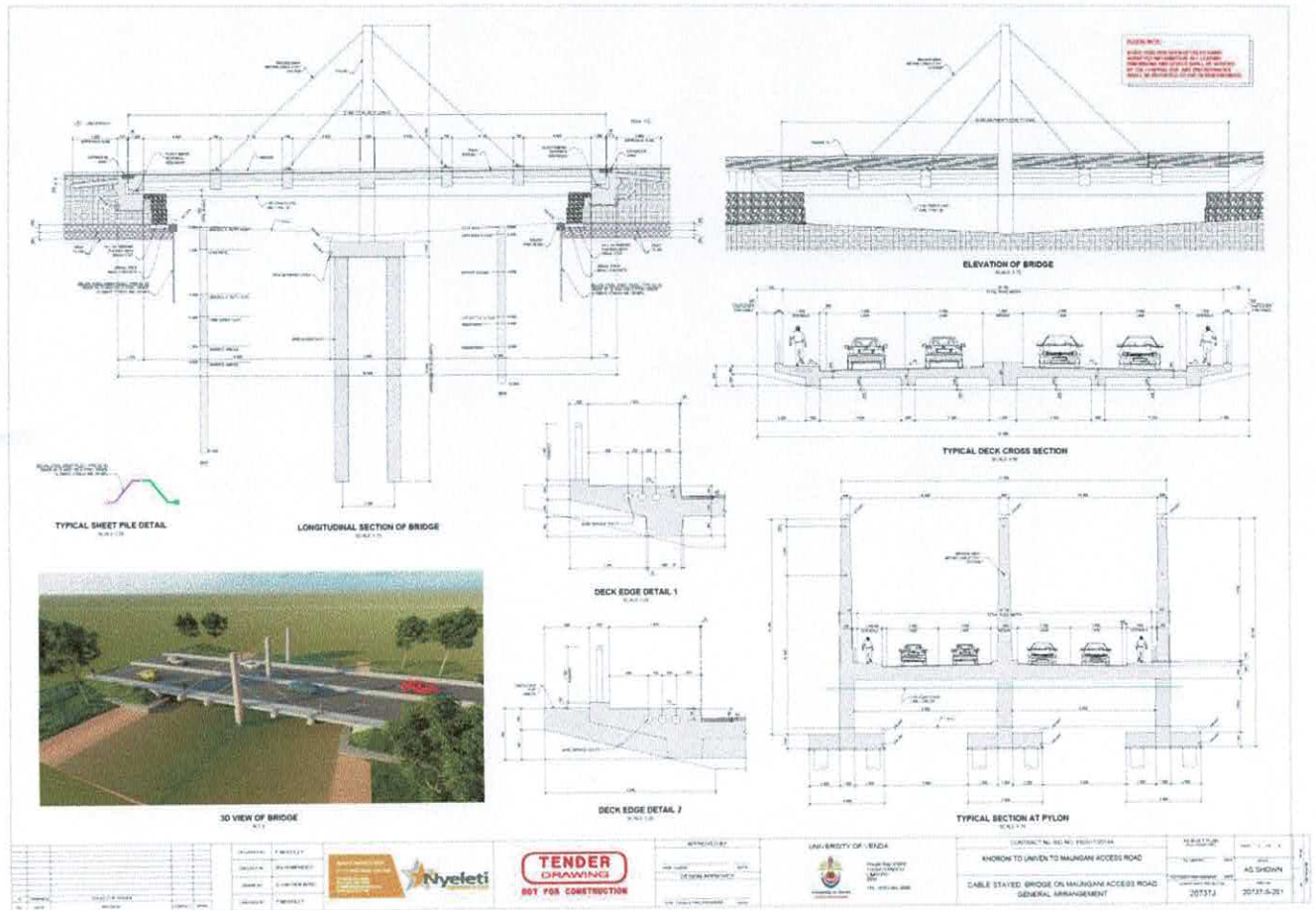


Figure 5. Bridge layout

Technology alternative (Preferred alternative)

The proposed University Access road will be comprised of pavement design which is based on 20-year design traffic of 3.2 MESA

- 30mm AC Asphalt Surfacing
- 150mm BSM 3 Bitumen Stabilised Base
- 150mm C4 Stabilised Subbase
- 150mm G7 Selected Subgrade
- In-situ

- A combination of asphalt and interlocking paving bricks (mainly from the new future gate up to the bridge)
- Bridge information (to be updated)

LEDET BA Report, EIA 2014: Project Name: Upgrading of the University of Venda access road from R524 and a bridge in Thulamela Local Municipality of Vhembe District, January 2020 - 15

Operational aspect alternative (Preferred alternative)

- The proposed development will be utilized by the University community to access the campus. Maungani community will also make use of the portion of the road to access their village. The access to the University will be controlled by means of a new gate which will be erected as part of the proposed development. The student transportation will be able to access and drop students outside the gate to avoid traffic congestion inside the University campus.

No Go Alternative

- The road remains undeveloped and safety hazard to the students and university community at large. The University will not be able to utilize the proposed road as the main gate and traffic and safety of the current main gate remains a concern. The No-Go option is not considered the best alternative by the Applicant

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)

22°	59'	06.23"	30°	26'	39.06"	Road start
22°	58'	41.04"	30°	26'	23.08"	Road end
22°	59'	00.53"	30°	26'	36.37"	Bridge
°	'	"	°	'	"	
°	'	"	°	'	"	

Alternative S2 (if any)

Alternative S3 (if any)

In the case of linear activities:

Alternative:

Latitude (S):

Longitude (E):

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

Alternative S1 (preferred or only route alternative)

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

°	'	"	°	'	"
°	'	"	°	'	"
°	'	"	°	'	"

Alternative S2 (if any)

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

°	'	"	°	'	"
°	'	"	°	'	"
°	'	"	°	'	"

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

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

Alternative:

Alternative A1³ (preferred activity alternative)

Size of the activity:

37834.437m ² (inclusive of the bridge = 493.367m ²). The road is 1.6km
m ²
m ²

Alternative A2 (if any)

Alternative A3 (if any)

or,

for linear activities:

Length of the activity:

Alternative:

Alternative A1 (preferred activity alternative)

Alternative A2 (if any)

m
m

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

Alternative A3 (if any)

	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)

	m ²
--	----------------

Alternative A2 (if any)

	m ²
--	----------------

Alternative A3 (if any)

	m ²
--	----------------

5. SITE ACCESS

Does ready access to the site exist?

YES	

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

Describe the type of access road planned:

--

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.

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.

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.

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.

9. ACTIVITY MOTIVATION

9(a) Socio-economic value of the activity

What is the expected capital value of the activity on completion?	R37.3m for construction and R2.7m for professional fees & disbursements = R40m
What is the expected yearly income that will be generated by or as a result of the activity?	No income; but a health service which will contribute to the quality of life
Will the activity contribute to service infrastructure?	YES
Is the activity a public amenity?	YES
How many new employment opportunities will be created in the development phase of the activity?	65
What is the expected value of the employment opportunities during the development phase?	R3.7m (10% of the capital value)

What percentage of this will accrue to previously disadvantaged individuals?

55% of the expected value of employment = R2.035m

How many permanent new employment opportunities will be created during the operational phase of the activity?

What is the expected current value of the employment opportunities during the first 10 years?

What percentage of this will accrue to previously disadvantaged individuals?

90-100%

9(b) Need and desirability of the activity

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

NEED:

- The proposed project entails upgrading of the existing gravel road to tar parallel the existing infrastructure but within the road reserve and a new bridge. The existing road is in poor condition due to soil erosion and becomes inaccessible during rainy periods.
- The existing road alignment over the existing structure is also not to any geometrical standard. If the road alignment is not improved with the proposed alignment it will cause safety issues and drainage issues.
- The current culverts structure is not well designed and totally insufficient for a long term (all weather bridge) design. The current structure will only be able to handle a maximum flood return of approx. 5 years. If we stay within these criteria, the possibility of overtopping and flooding in future is a very high risk. The inlet of one of the culvert structure is already clogged and overgrown. If a high flood is experienced, flooding of the road and adjacent properties might occur. The new proposed bridge, with higher and fewer openings will also assist with the river flow through the structure.
- The proposed project will improve safety of the road to the road users
- The University intends to utilize the road proposed for upgrade as the main entrance to the University due to traffic on the current entrance. The current gravel road will continue to be utilized for future development within University

DESIRABILITY:

- The proposed development will be undertaken in both partial disturbed and natural vegetation. The construction of the proposed access road parallel to the existing alignment from R524 to the river falls within Ecological Support Area 2, and construction from the river to the University campus is within Critical Biodiversity Area

<ul style="list-style-type: none"> The proposed development will cross Mvudi river which within a wetland 			
i.	Was the relevant municipality involved in the application?	YES	
ii.	Does the proposed land use fall within the municipal Integrated Development Plan?	YES	
iii.	If the answer to questions 1 and / or 2 was NO, please provide further motivation / explanation:		

DESIRABILITY:			
i.	Does the proposed land use / development fit the surrounding area?	YES	
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	
iii.	Will the benefits of the proposed land use / development outweigh the negative impacts of it?	YES	
iv.	If the answer to any of the questions 1-3 was NO, please provide further motivation / explanation:		
	N/A		
v.	Will the proposed land use / development impact on the sense of place?		NO
vi.	Will the proposed land use / development set a precedent?		NO
vii.	Will any person's rights be affected by the proposed land use / development?		NO
viii.	Will the proposed land use / development compromise the "urban edge"?		NO
ix.	If the answer to any of the question 5-8 was YES, please provide further motivation / explanation.		
	N/A		

BENEFITS:			
i.	Will the land use / development have any benefits for society in general?	YES	
ii.	Explain:		
	<ul style="list-style-type: none"> The proposed development will improve road condition and socio-economic status of the society The development will ensure that the road is easily accessible and safe for use. Employment and skills transfer opportunities will be created during construction period 		

iii.	Will the land use / development have any benefits for the local communities where it will be located?	YES	
iv.	Explain: <ul style="list-style-type: none"> • Accessibility- The proposed development will improve road condition making it more accessible to the University community • Employment and skills transfer opportunities will be created during the construction period 		

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:
Environmental Conservation Act (Act 73 of 1989)	DEA	1989
National Environmental Management Act (Act 107 of 1998)	DEA	1998
Environmental Impact Assessment Regulations	DEA	2014
National Heritage Resources Act (Act 25 of 1999)	SAHRA	1999
National Water Act (Act No 36 of 1998)	DWA	1998
National Environmental Management: Biodiversity Act No 10 of 2004	DEA	2004
Limpopo Conservation Plan V2 2013	LEDET	2013
National Environmental Management: Air Quality Act No 39 of 2004	DEA	2004
National Forests Act (Act 84 of 1998)	DAFF	1998
National Waste Management Act (Act No. 59 of 2008)	DEA	2008
Occupational Health and Safety Act (Act No. 85 of 1993)	Department of Labour	1993
Conservation of Agricultural Resources Act (Act No. 43 of 1983)	DAFF	1983
South African Constitution 108 of 1996	The Parliament	1996

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	
	±8m ³

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

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

All solid waste generated during the construction process will be placed in bulk waste collection area within development footprint. Separation of waste and recycling of paper, glass etc shall be promoted. Hazardous materials will be placed separate from general solid waste. Waste will be removed regularly by the appointed contractor for disposal to an approved landfill sites. Hazardous waste will be removed by a registered hazardous waste removal contractor and disposed of at any registered hazardous waste landfill.

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

General waste will be disposed of at Local Municipal landfill site. Any hazardous waste which might be generated will be disposed at any registered hazardous waste landfill

Will the activity produce solid waste during its operational phase?

	NO

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

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

Separation of waste will be encouraged by providing colour coded waste collection bins. General waste containers will be allocated for waste collection during operation of the facility and removed on a weekly basis for disposal to an approved landfill site. Recyclable waste such as plastic, cans, bottle will be stored in a designated bin for recycling.

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

All hazardous waste generated will be removed and disposed of to a registered hazardous landfill by a registered hazardous waste removal contractor.

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?

	NO
--	----

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

	NO
--	----

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

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?

	NO
--	----

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

	m ³
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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 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?

	NO
--	----

If yes, provide the particulars of the facility:

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

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

Chemical toilets will be used on site during construction phase. The emptying and removal of the chemical toilets will be done at an approved facility by a competent contractor

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?

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:

There will be emission into the atmosphere in the form of dust during construction phase and exhaust fumes during operation of the facility, which will not trigger listed activity in terms of Notice No. 964 of 2012 of the National Environmental Management: Air Quality Act. The EMPr recommended mitigation measures to minimize dust and vehicle fumes that may arise during implementation of the proposed development

11(d) Generation of noise

Will the activity generate noise?

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

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

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

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

There will be limited construction noise from vehicles, machineries as well as construction workers during the construction Phase. Construction activity will be restricted to regular working hours, excluding Sundays and public holidays.

12. WATER USE

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

Municipal	water board	Groundwater	river, stream, dam or lake	other	the activity will not use water
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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:

9581.621 m³ (estimation)
YES <input type="checkbox"/>

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

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.

- The Applicant intends to utilize water from Mvudi River during construction. Water Use License application will be submitted to the Department of Water and Sanitation in May 2019**

13. ENERGY EFFICIENCY

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

N/A

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

N/A

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

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:

Portion 0 of the farm Beuster 253 MT and Palmaryville 254 MT within Thulamela local Municipality in the Limpopo Province

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

Vhembe District

Thulamela Local Municipality

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:

Subsistence farming

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?

NO

Must a building plan be submitted to the local authority?

NO

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)

1. GRADIENT OF THE SITE

Indicate the general gradient of the site.

Alternative S1:

Flat	1:50 – 1:20	1:20 – 1:15 X	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	X
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			

4. 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

Geotechnical study is underway. The report will be updated as soon as Geotechnical investigation report becomes available

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

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

The proposed road upgrade will run parallel to the existing alignment but within the existing road reserve. The proposed development will be undertaken in an area comprised of both disturbed and natural vegetation with low alien plant infestation. Portion of the road and the bridge will be constructed within a wetland.

The following information was adapted from the Ecological Impact Assessment study report for the proposed project by Naledzani Environmental Services, May 2019.

The site chosen for the proposed development falls within Savanna biome (Rutherford and Westfall (1994). Mucina and Rutherford (2006) classified the study area as falling under two vegetation types, the Soutpansberg Mountain Bushveld (SVcb 21) vegetation type of the Central Bushveld, and the Granite Lowveld of the Lowveld. The conservation status of **Soutpansberg Mountain Bushveld** is Vulnerable with 24% target for conservation and Granite Lowveld vegetation is considered Vulnerable with a target of 19% for conservation. (Mucina and Rutherford, 2006).

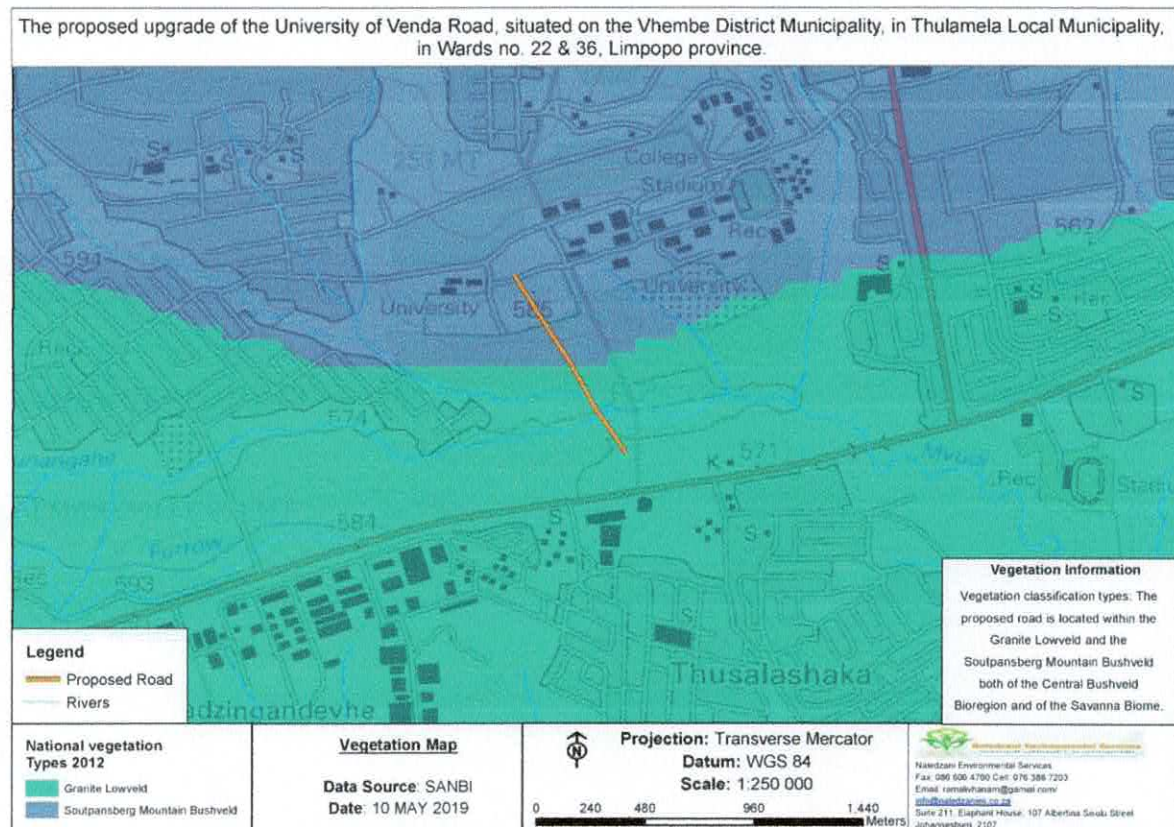


Figure 6. Broad-vegetation map for the site

The results from the desktop survey conducted by Naledzani Environmental Services indicated that the proposed area is located at 2230CD quarter degree grid square. From the data, the desktop results showed that the proposed development could have impacts on the seven (7) Red Data Listed plant species that could occur in the quarter degree grid square. During the field assessment no red data listed plant was encountered on site.

The section from the R524 towards the River (Mvudi) has a well-developed grass layer. Species such as *Urochloa mosambicensis*, *Panicum maximum*, *Perotis patens*, *Anthephora pubescens*, *Melinis repens*, *Elionurus muticus*, *Eragrostis nindensis*, *Themeda triandra*, and *Trachypogon spicatus* were recorded. The herb and shrub layer was categorised by *Lippia javanica*, *Lantana camara*, *Datura ferox*, *Bidens pilosa*, *Senna didymobotrya*, *Ricinus communis*, *Ipomea purpurea*, *Commelina africana*, *Dichrostachys Cinerea*, *Gymnosporia senegalensis* and *Xanthium strumarium*. Tall trees recorded on site include *Ficus sycomorus*, *Vachellia karoo*, *Annona senegalensis*, *Vachellia sieberiana*.



Figure 7. Overview of the current road facing the University of Venda



Figure 8. Section of the road with Vachellia karoo and a well-developed grass layer

Towards the river (wetland) hydrophilic vegetation that is associated with permanent or frequently saturated soils were recorded. Plant species such as *Typha capensis*, *Phragmites australis*, *Cyperus denudatus*, *Arundo donax* and *Cyperus fulgens* were recorded. Facultative dry-land species such as *Verbena arborescens*, *Lippia javanica*, *Ricinus communis*, *Vachellia sieberiana*, *senna didymobotrya*, *Mucuna coriacea*.



Figure 9. Area proposed for the new bridge



Figure 10. *Vachellia sieberiana* with a well-developed grassland underneath

Alien invasive plants

The level and abundance of the alien plant species was low on site but those recorded are tabulated below on table 1 including the NEMBA category for each species.

Scientific name	Common name	NEMBA Category
<i>Argemone Mexicana</i>	Mexican prickly poppy	1b
<i>Lantana camara</i>	Lantana	1b
<i>Xanthium strumarium</i>	Large cocklebur	1b
<i>Ricinus communis</i>	Castor oil	2
<i>Melia azedarach</i>	White syringa	1b
<i>Arundo donax</i>	Giant reed	1b
<i>Verbena arborescens</i>	Tall verbena	1b
<i>Solanum maritanum</i>	Bug weed	1b

<i>Senna didymobotrya</i>	Peanut butter cassia	1b
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Figure 11. <i>Xanthium strumarium</i> an invader on site	Figure 12. <i>Ricinus communis</i> as a dominating invader on site
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Medicinal Plants

The site proposed for the development is also comprised of medicinal plants

Table 2. Medicinal plants recorded in the study areas.

Scientific name	Common name	Conservation Status
<i>Lippia javanica</i>	Lemon bush	Indigenous
<i>Ricinus communis</i>	Castor oil	Exotic
<i>Lantana camara</i>	Common lantana	Exotic
<i>Annona senegalensis</i>	African custard-apple	Indigenous
<i>Amaranthus hybridus</i>	Smooth pigweed	Exotic

Faunal Survey

From the assessment of the study area by Naledzani Environmental Services, no wild mammal species were identified including both large and small mammals which may be due to build up nature of the surrounding environment. As such, No Red Data mammal species or mammals of conservation importance were sighted during the field surveys. Only cows were seen grazing on the area where a new access is planned.

Avi-fauna

Desktop assessment (SABAP 2) showed that a total of 325 bird species have been confirmed within the QDGC. From field evaluation of the study area, few birds' nests were noted on the reeds on the area where a new access road is proposed. Few birds were heard at a distance making bird-sounds.

Amphibians

According to Minter et al. (2004), 13 amphibian species have been confirmed to occur within the affected QDGC. One of which was confirmed within the study area namely *Amietia angolensis* (Common River Frog). Based on habitat availability within the present study area, especially many non-perennial drainage lines as well as the river, many of the frog species confirmed to be present within QDGC's are likely to be present within the study site.

Wetland findings

Hydrogeomorphic unit

The field assessment revealed the road is crossing one wetland type (**channelled-valley bottom wetland**), which is mostly flat wetland area located along a valley floor with a river channel running through it. Characterized by being positioned on a Valley Floor and the absence of characteristic floodplain features. Dominant water inputs are from the river channel flowing through the wetland, either as surface flow resulting from flooding or as lateral seepage, and/or from adjacent valley-side slopes. This wetland occurs along the Mvudi stream which the road crosses.

Wetland vegetation

The wetland on site had hydrophillics such as *Typha capensis*, *Phragmites australis*, *Cyperus denudatus*, *Arundo donax* and *Cyperus fulgens*



Figure 13. The hydrophilics (*Typha capensis* and *Phragmites australis*) along the wetland area

PES of wetland in the study area

The wetland on site was assessed and it was allocated the PESC of B - being largely natural with some habitat modification. The Present ecological state (PES) of the wetland on site is calculated as per the table below

Table 3. Broad PES values and categories of the wetland in the study area

Wetland type	Mean PES value	PESC
Channelled valley bottom	3.1	B

EIS of wetland in the study area

The wetland in the study area has EIS categories and EMC values as indicated below

Table 4. EIS and EMC values of wetlands in the study area.

Wetland	EIS Category (Median value)	EMC
Channelled valley bottom	High (2.3)	B

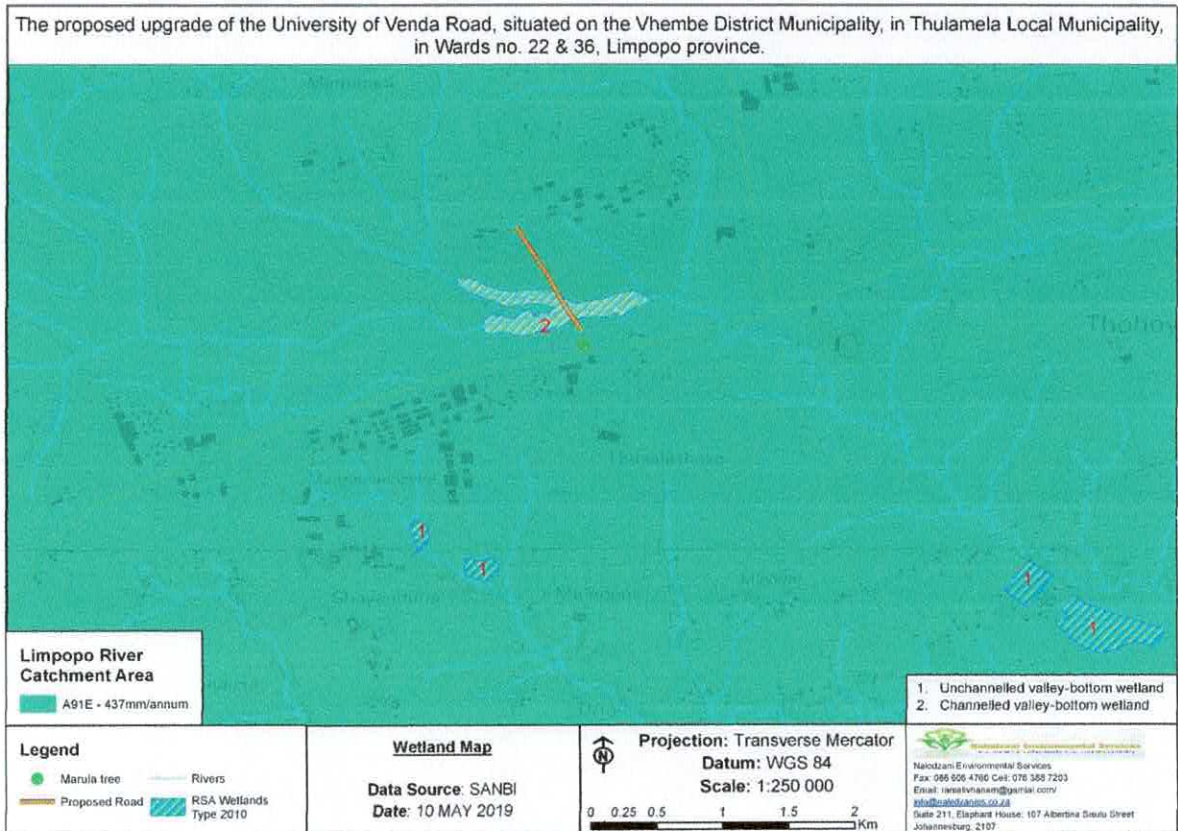


Figure 14. Wetland unit map for the site

Critical Biodiversity areas

According to the Limpopo Conservation Plan (C-Plan, v2), the proposed road is located within an Ecological Support Area 2 from the R524 road to the river. From the river to the University of Venda, the site is classified as Critical Biodiversity Area 1.

The proposed upgrade of the University of Venda Road, situated on the Vhembe District Municipality, in Thulamela Local Municipality, in Wards no. 22 & 36, Limpopo province.

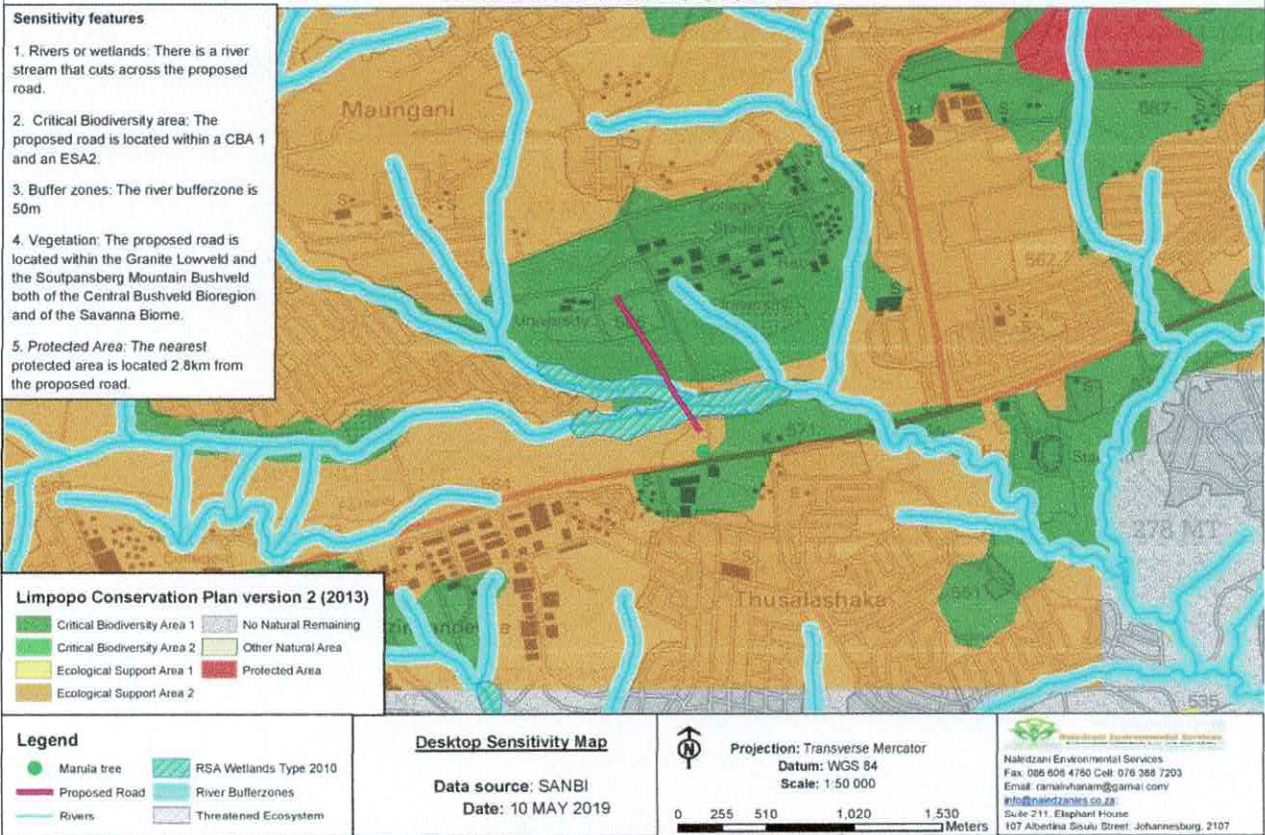


Figure 15. Study area in relation to the Limpopo Conservation Plan

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	X	5.22 School	
5.2 Low density residential		5.23 Tertiary education facility	X
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 Project site ^H		5.36 Hospital/medical centre	
5.16 Landfill or waste treatment site		5.37 River, stream or wetland	X
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?

N/A

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:

If NO, specify:	
-----------------	--

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:	
If NO, specify:	

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?		NO
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If YES, explain:	No archaeological or paleontological sites were identified around proposed project location during the study conducted by Vhubvo Archaeo-Heritage Consultants in May 2019. The specialist advised that although no archaeological or paleontological sites were observed on site, it should be noted that most archaeological materials are normally found underground, as such should any archaeological material be unearthed accidentally during the course of construction, LIHRA should be alerted immediately and construction activities be stopped within a radius of at least 10m of such indicator until all the necessary procedures has been followed
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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:	
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Will any building or structure older than 60 years be affected in any way?		NO
Is it necessary to apply for a permit in terms of the National Heritage Resources Act, 1999 (Act 25 of 1999)?		NO

If yes, please submit 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

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.

Interested and affected parties (I&APs) were given an opportunity to provide input and comments on the project for a period of 30 days.

A newspaper advert was placed in the Daily Sun newspaper on the 09/05/ 2019. Site notices were displayed in the vicinity of the proposed project.

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**.

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)
Limpopo Heritage Resources Agency	Yes
DWS	No
Thulamela Local Municipality	No
Vhembe District	No
Department of Agriculture, Forestry and Fisheries	No

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	
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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):

Comments received from LIHRA. The development was given a go ahead from the heritage resource point of view. LIHRA has indicated that the development can ahead without further heritage investigation. They have also cautioned that should any heritage resource material be discovered during the construction activities, LIHRA and Heritage specialist must be consulted

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.

- ❖ A question was raised regarding the commencement date for the access road project:
- ❖ A question was asked regarding the medicinal plants which are likely to be affected during the clearing process.
- ❖ A plea was made by Mr Tshitangano that Environmental Resource Management (ERM) students be fully involved in the process as compliance with environmental regulations is obligatory during development on the campus.

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):

- ❖ It was indicated that the development is anticipated to commence at the end of November 2019.
- ❖ It was indicated that medicinal plants species were identified in the ecological assessment specialist report and will be relocated before the area is cleared for development process.

[Empty box]

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.

Alternative (preferred alternative)

Direct impacts:

Biodiversity and soil

Impact that may arise during construction phase

Potential impacts on vegetation and soil include

- Clearing of vegetation during site preparation leading to loss of biodiversity
- Vegetation clearing will also have a negative impact on the riparian vegetation leading to alteration of the physical components of wetland ecosystems and accumulation of sedimentation within the wetland due to soil erosion
- The clearing of vegetation and soil will have an impact on the associated fauna; especially ground living and fossorial species as well as arboreal species occurring within the site, both through modification of habitat and disturbance caused by human activity.
- Alien species invasion as a results of disturbed environment
- Movement of construction vehicle and machinery will result in soil compaction and erosion around the construction area
- Loss of top soil, soil nutrients and fertility as a results of soil erosion and contamination from hydrocarbon spillages
- Improper waste management – which could lead to possible land contamination. There is evidence of littering and illegal dumping occurring at the proposed project site.
- Loss of medicinal plants

Impact that may arise during operational phase

- Alien plant species colonization if not properly managed during construction

Topography

Impact that may arise during construction phase

- Changes in surrounding landscape due to construction activities
- River and wetland bed and banks will be excavated in the preparation for construction

Impact that may arise during operational phase

- The new bridge structure will be permanent

Ground and surface water

Impact that may arise during construction phase

- Contamination of soil and water due to improper handling of hazardous material such as fuel, cement, waste water and other construction materials.
- Changes in chemical and biological components of wetland ecosystems due to pollution
- Increased accumulation of sediment as a result of soil erosion can alter the chemical and hydrologic regime of the wetlands in a relatively short time
- modification of water levels and flow regimes as a results of water abstraction for construction purposes
- Poor waste management may contaminate surface and ground water

Impact that may arise during operational phase

Waste Management

Impact that may arise during construction phase

- Illegal dumping of construction waste resulting in land contamination. There was an evidence of illegal dumping and littering at the proposed project site.

Impact that may arise during operational phase

Air Pollution and Noise

Impact that may arise during construction phase

- Clearing of ground, movement of construction vehicles and machineries as well as the actual construction will generate excessive dust on site and the surrounding area
- Excessive dust is also envisaged during high wind conditions
- Release of vapours into the surrounding environment during the refuelling, fuel spillage and motor vehicle exhausts.
- Construction and movement of construction machineries will create excessive noise which might become nuisance to the surrounding communities

Impact that may arise during operational phase

No impact envisaged

Archaeology/ Heritage

Impact that may arise during construction phase

- No visible heritage and archaeological resources will be impacted upon by the proposed development. However heritage resources that might be buried underground may be impacted upon during excavations

Impact that may arise during operational phase

- None envisaged

Visual/Aesthetic

Impact that may arise during construction phase

- Littering and illegal dumping on the site may result in an alteration of the visual character of the site which is already compromised due to illegal dumping and littering occurring on site
- Loss of vegetative cover

Impact that may arise during operational phase

- The new infrastructures will be permanent

Socio Economic

Impact that may arise during construction phase

- There will be temporary and permanent job creation during construction and operation of the proposed development. Local people will be considered for employment.
- Business opportunities for informal traders
- Skills transfer to those who will be employed during the construction activities
- Improved road conditions to road users

Impact that may arise during operational phase

- Improved road conditions to road users

Construction Traffic

- Increased traffic congestion as a result of construction vehicles

Impact that may arise during operational phase

- Increased traffic congestion as the applicant intend to utilize the road proposed for upgrade as main entrance to the University campus

Health, Safety and Security

Impact that may arise during construction phase

- Construction sites may attract large numbers of people who may gather around the site and as such pose safety risks in the area. Criminals may utilise the opportunity to steal items from the site
- Transfer of flammable liquids has the potential to impact on the safety of those onsite or immediately surrounding the site, should there be an accident, spillage or fire.

Impact that may arise during operational phase

- None envisaged

Cumulative Impacts

Surface disturbance

- The proposed project will increase the disturbed area although it will be undertaken with the road reserve.
- Increase wetland modification which is already impacted upon by the existing road which cut across Mvudi River.

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 proposed development will have direct negative ecological impacts, with vegetation clearing leading to habitat loss and the most important potential impacts on the riparian vegetation leading to alteration of the physical components of wetland ecosystems and accumulation of sedimentation within the wetland due to soil erosion, modification of water flow and chemistry. The construction of the proposed access road parallel to the existing alignment from R524 to the river where the portion of land falls within Ecological Support Area 2 will have moderate to low impact, whereas the development from the river to the University campus which is within Critical Biodiversity Area 1 will have high significance impact on the environment. Although the wetland has already been impacted upon by the existing infrastructures, biodiversity on the proposed area for the bridge is considered near natural state.
- Possible soil and water contamination as well as excessive dust and noise envisaged for a short duration, however through correct implementation of recommended mitigation measures, the impacts can be reduce to minimal.
- It is also noted that the proposed development will bring positive impact to the society in the form of job creation during construction and operational phase and contribute to socio economic upliftment of the area.
- University communities and other road users will access to improved road condition.

No-go alternative (compulsory)

- The road remains undeveloped and safety hazard to the students and university community at large. The University will not be able to utilize the proposed road as the main gate and traffic and safety of the current main gate remains a concern. The No-Go option is not considered the best alternative by the Applicant

Alternative B

Alternative C

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	
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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:

Biodiversity and soil management

Mitigation Measures:

- The ECO must conduct regular site inspections prior to clearing.
- Employees and contractors should be made aware of the presence of, and rules regarding, flora and fauna through suitable induction training and on-site signage
- The unnecessary removal of vegetation should be avoided and should not extend beyond the perimeters of the construction footprints. Permission shall be sought from ECO before any vegetation clearing commences.
- Medicinal and other indigenous trees of significance should be protected where necessary.
- Tall shrubs on site should be incorporated into the design/layout plan for shade purpose
- Medicinal plants can be translocated during construction and replanted
- The removal of vegetation should be kept to a minimum.
- Unnecessary driving around in the veld or bulldozing natural habitat must not take place.
- Do not disturb nests, breeding sites or young ones. Do not attempt to kill or capture snakes unless directly threatening the safety of employees.
- No animals should be intentionally killed or destroyed and poaching and hunting should not be permitted on the site.
- Contract employees must be educated about the value of wild animals and the importance of their conservation
- Slopes produced by the removal of soil must be kept to a minimum to reduce the chances of erosion damage at construction sites.
- Movement of vehicles shall be restricted to demarcated area.

- Construction during rainy and windy days should be avoided to minimize compaction of areas outside the project boundaries
- Measures must be implemented to stabilize soil in all disturbed areas
- Topsoil should be handled twice only - once to strip and stockpile, and secondly to replace, level, shape and scarify.
- Topsoil should not be compacted in any way, nor should any object be placed or stockpiled upon it.
- Stockpile in an area that is protected from storm water runoff and wind.
- Topsoil stockpiles should not exceed 1.5 m in height and should be protected by a mulch cover where possible.
- Stockpile topsoil for the minimum time period possible i.e. strip just before the relevant activity commences and replaced as soon as it is completed.
- Measures shall be put in place to channel storm water away from stockpile areas
- Disturbed areas surrounding the project site shall be rehabilitated to avoid alien invasion
- Alien control program shall be introduced through project cycle, starting with the eradication of alien plants found on site
- Vehicles shall be parked within demarcated area to minimize soil contamination and compaction

Ground and Surface Water

Mitigation Measures:

- No construction shall take place within a watercourses without approval by DWS
- Aligning the proposed bridge to the existing bridge.
- Construction across wetlands/riparian areas should be restricted to low flow period (dry winter season)
- Ensure that construction activities are carefully monitored to limit unnecessary impacts to wetlands/riparian areas (particularly in-stream habitat) and should be approved by WUL.
- Do not lower the original stream bed / profile of the wetland/river, when constructing the bridge, as this may result in scouring in an upstream direction and further alteration of bed conditions.
- Ensure that coarse immovable material including boulders and other rock in river channels is reinstated/rehabilitated to ensure continued stability and functioning of the river systems. River sediments should not be permanently removed from the system in any case. Rehabilitation of the river and wetland as soon as construction is completed.
- Construction vehicles and machinery must be well maintained to prevent oil and fuel leaks. Spill trays must be

placed under stationery machines. Spill kits must be kept on site and staff must be trained in the correct use of these kits.

- No maintenance of construction machineries shall take place on site. Spill trays must be used during repairs of construction vehicles or machines.
- No refueling of vehicles and machineries on site.
- Ensure that all hazardous material are properly stored in a designed area which banded, outside 100 year floodline or 50m away from the watercourse
- An emergency management procedure which includes spill response must be prepared and kept onsite
- Staff must be trained to implement the emergency management procedure;
- Used oil must be taken to the nearest approved oil refiner or fuel recycling point for recycling and must not be stored for extended periods within the site camp.
- The location for the site camp must be carefully selected at least 100 meters away from the water courses
- Construction activities in river and wetlands should proceed during the dry winter months (low or zero flow periods) in order to limit the potential for erosion linked to high runoff rates.
- Water quality shall be monitored by a qualified Environmental Officer.
- Excavated and imported material should be stored away from the river banks /areas of concentrated flow to limit the risk of sediment wash to downstream areas.
- Any topsoil removed from wetlands must be stockpiled separately from subsoil material and replaced once construction is complete to facilitate re-colonization of the site.
- Operation and storage of machinery and construction-related equipment must be done outside of wetlands and rivers wherever possible, unless authorised by a WUL.
- Toilets should be located outside of the 1:100 yr. flood line of a watercourse or 50m or from any natural water bodies including streams and wetlands. Waste from chemical toilets should be disposed of regularly and in a responsible manner by a registered waste contractor.
- A sufficient number of wind and animal proof waste bins must be allocated. The contractor must ensure that these waste bins are emptied at a licensed landfill site on a weekly basis
- The site should be shaped in order that proper surface drainage and storm water management would be

effective and water should not pond after heavy rains

Water Use

Mitigation Measures:

- Water (for drinking, cooking, dust suppression and construction purposes) should not be wasted and construction workers must be educated on the value and importance of water.
- No water can be abstracted from a water source, i.e rivers, streams, ground without a permit being obtained from **Department of Water and Sanitation (DWS)**.
- Record water consumption during construction phase
- Water shall be utilized wisely to minimize water usage

Waste Management

- Suitable waste storage containers shall be provided on site to prevent littering and illegal dumping
- Waste storage areas shall be clearly demarcated and colour coding waste skips must be allocated for waste separation
- Mixing of concrete shall be done on impermeable surface
- Concrete, cement, and masonry products may never be discharged into the storm drain system
- Effluent from these process shall be contained to prevent surface and groundwater
- Mobile ablution facilities shall be maintained according to manufacturer by an approved contractor
- Contaminated soil from fuel leaks and contaminated waste shall be cleaned up immediately by either bioremediation or removed from site and disposed as hazardous waste to an approved landfill facility by an approved contractor
- Hazardous waste shall be collected in suitable containers which must always be sealed and stored in a designated area prior to disposal
- Employing the services of registered waste transporter contractor to collect and dispose hazardous wastes to an approved landfill site for hazardous waste
- Waste shall be removed for disposal on a weekly basis to minimize bad odour and breeding ground for diseases
- Waste disposal manifests and safety disposal certificate for hazardous waste must be kept of all solid waste that is disposed of at a registered landfill site or sent for recycling
- Recycling of waste shall be encouraged

- No burying or burning of waste on site

Air and Noise Pollution

Mitigation Measures:

- Vegetation clearing shall be done in phases so as to minimize the time which the stripped areas are exposed
- The cleared topsoil must be stockpiled in such a way that transportation by wind is limited. This can be done by restricting the height of stockpiles to 1.5m.
- Construction areas must be dampened to prevent excessive dust formation, especially during the winter months (dry and windy conditions)
- Excavations shall not be done during excessive wind
- No domestic waste or cleared vegetation may be burned at the site
- Construction vehicles and machinery must be well maintained (serviced) to reduce excessive emissions during operation.
- No open fires shall be allowed on site.
- All material loads should be adequately covered during transportation
- Contractors must comply with Provincial Noise Regulations /or Local Municipal By-Laws.
- The contractor must ensure that construction activities are limited to hours of daylight during weekdays (07:00-17:00) and 08:00-14:00 on Saturdays, Sundays and public holidays.
- Proper equipment and vehicle maintenance must be implemented on a regular basis to keep noise levels to acceptable levels.
- Public to be notified in advance of any activities that will be undertaken which might cause excessive noise generation

Archaeology/Heritage Resources

Mitigation Measures:

- Prior to construction, contractors should be given training on how to identify and protect archaeological remains that may be discovered during the project.
- In the event that any of the above are unearthed, all construction within a radius of at least 10m of such indicator should cease and the area be demarcated by a danger tape. Accordingly, a professional archaeologist or SAHRA officer should be contacted immediately
- Any measures to cover up the suspected archaeological material or to collect any resources is illegal and punishable by law
- No person may exhume or collect such remains, whether of recent origin or not, without the endorsement by LIHRA/ or SAHRA

Visual/Aesthetic and Landscape Character

Mitigation Measures:

- The site shall be kept visually and aesthetically pleasing, especially in and around the construction camp
- Material and stockpiles must not be higher than 1.5 m
- Removal of vegetation must be limited to the actual construction footprints.
- Waste collection bins shall be used for solid waste disposal
- Litter and solid construction waste must be removed and disposed of on a weekly basis at the licensed landfill
- All temporary stockpile areas including litter and rubble must be removed on completion of construction
- No dumping of construction material in the bush or watercourses shall be allowed

Socio Economic

Mitigation Measures:

- Local people must be given first preference wherever possible during recruitment process
- Source supply material from the local supplier where possible

Traffic

Mitigation Measures:

- Movement of heavy vehicles to and from the site should be conducted during periods of the day when peak flow is minimal.
- Erect visible warning signs in the vicinity of the project site

Health, Safety and Security

Mitigation Measures:

- The local residents must be informed of the construction works 3-4 weeks before commencing with the project as well as how construction will take place.
- The contractor shall conform to all the stipulations of the Occupational Health and Safety act and the applicable Regulations
- An environmental awareness training programme for all staff members shall be put in place by the Contractor and all staff members shall be briefed about the EMPr and relevant occupational health and safety issues

before commencing with any work,

- Barrier tape should be provided around construction site to prevent unauthorized access and safety risks
- Signboards must be provided at the entrance and exit of the project site as a caution to motorists and pedestrians of potential risks.
- The storage of oils, materials, chemicals, fuels, etc. to be used during the construction phase must not pose a risk to the surrounding environment; such storages must be bunded to contain possible spillages.
- Make use of suitable containers for hazardous waste storage
- Weekly removal of waste to ensure that it doesn't cause bad odour and also becomes a breeding ground for diseases.
- The Contractor must have a basic spill control kit available at the construction site
- Warning signs or notices must be displayed in potentially dangerous areas (e.g. no smoking), in accordance with the requirements of SABS 1186.
- *Emergency response procedure shall be made available on site. Fire service and other emergency numbers must also be displayed at the site*
- Firefighting equipment must be readily available on site and in good working condition.
- Personnel must be given the appropriate training in the use of the firefighting equipment, first aid and other emergency procedures.
- Ensure that trained first aid personnel are available on site at all times to handle emergencies
- First Aid kit must be available on site
- A system must be put in place to record any incidents and/or accidents;
- All vehicles and equipment used on site must be operated by appropriately trained and licenced employees
- Provide safe and hygienic ablution for the construction workers at the site
- Employees must be provided with necessary Personal Protective Equipment
- The Contractor must provide safe drinking water on site and suitable ablution facilities

Is an EMPr attached?

The EMPr must be attached as Appendix F.

YES	
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SECTION F: APPENDIXES

The following appendixes must be attached as appropriate:

Appendix A: Site plan(s)

Appendix B: Photographs

Appendix C: Facility illustration(s)

Appendix D: Specialist reports

Appendix E: Comments and responses report

Appendix F: Environmental Management Programme (EMPr)

Appendix G: Other information

SECTION G: DECLARATION BY THE ENVIRONMENTAL ASSESSMENT PRACTITIONER

I, _____ 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, 2010;
- (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:

Mawedza Geo-Environmental Consulting (PTY) LTD

Name of company:

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effective and water should not pond after heavy rains

Water Use

Mitigation Measures:

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- No water can be abstracted from a water source, i.e rivers, streams, ground without a permit being obtained from **Department of Water and Sanitation (DWS)**.
- Record water consumption during construction phase
- Water shall be utilized wisely to minimize water usage

Waste Management

- Suitable waste storage containers shall be provided on site to prevent littering and illegal dumping
- Waste storage areas shall be clearly demarcated and colour coding waste skips must be allocated for waste separation
- Mixing of concrete shall be done on impermeable surface
- Concrete, cement, and masonry products may never be discharged into the storm drain system
- Effluent from these process shall be contained to prevent surface and groundwater
- Mobile ablution facilities shall be maintained according to manufacturer by an approved contractor
- Contaminated soil from fuel leaks and contaminated waste shall be cleaned up immediately by either bioremediation or removed from site and disposed as hazardous waste to an approved landfill facility by an approved contractor
- Hazardous waste shall be collected in suitable containers which must always be sealed and stored in a designated area prior to disposal
- Employing the services of registered waste transporter contractor to collect and dispose hazardous wastes to an approved landfill site for hazardous waste
- Waste shall be removed for disposal on a weekly basis to minimize bad odour and breeding ground for diseases
- Waste disposal manifests and safety disposal certificate for hazardous waste must be kept of all solid waste that is disposed of at a registered landfill site or sent for recycling
- Recycling of waste shall be encouraged

- No burying or burning of waste on site

Air and Noise Pollution

Mitigation Measures:

- Vegetation clearing shall be done in phases so as to minimize the time which the stripped areas are exposed
- The cleared topsoil must be stockpiled in such a way that transportation by wind is limited. This can be done by restricting the height of stockpiles to 1.5m.
- Construction areas must be dampened to prevent excessive dust formation, especially during the winter months (dry and windy conditions)
- Excavations shall not be done during excessive wind
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Mitigation Measures:

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- No person may exhume or collect such remains, whether of recent origin or not, without the endorsement by LIHRA/ or SAHRA

Visual/Aesthetic and Landscape Character

Mitigation Measures:

- The site shall be kept visually and aesthetically pleasing, especially in and around the construction camp
- Material and stockpiles must not be higher than 1.5 m
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- All temporary stockpile areas including litter and rubble must be removed on completion of construction
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Socio Economic

Mitigation Measures:

- Local people must be given first preference wherever possible during recruitment process
- Source supply material from the local supplier where possible

Traffic

Mitigation Measures:

- Movement of heavy vehicles to and from the site should be conducted during periods of the day when peak flow is minimal.
- Erect visible warning signs in the vicinity of the project site

Health, Safety and Security

Mitigation Measures:

- The local residents must be informed of the construction works 3-4 weeks before commencing with the project as well as how construction will take place.
- The contractor shall conform to all the stipulations of the Occupational Health and Safety act and the applicable Regulations
- An environmental awareness training programme for all staff members shall be put in place by the Contractor and all staff members shall be briefed about the EMPr and relevant occupational health and safety issues

before commencing with any work,

- Barrier tape should be provided around construction site to prevent unauthorized access and safety risks
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.....

Signature of the Environmental Assessment Practitioner:

Mawedza Geo-Environmental Consulting (PTY) LTD

Name of company:

Date: 21/01/2020

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

Impact that may arise during operational phase

- Alien plant species colonization if not properly managed during construction

Topography

Impact that may arise during construction phase

- Changes in surrounding landscape due to construction activities
- River and wetland bed and banks will be excavated in the preparation for construction

Impact that may arise during operational phase

- The new bridge structure will be permanent

Ground and surface water

Impact that may arise during construction phase

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- Changes in chemical and biological components of wetland ecosystems due to pollution
- Increased accumulation of sediment as a result of soil erosion can alter the chemical and hydrologic regime of the wetlands in a relatively short time
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- Poor waste management may contaminate surface and ground water

Impact that may arise during operational phase

Waste Management

Impact that may arise during construction phase

- Illegal dumping of construction waste resulting in land contamination. There was an evidence of illegal dumping and littering at the proposed project site.

Impact that may arise during operational phase

Air Pollution and Noise

Impact that may arise during construction phase

- Clearing of ground, movement of construction vehicles and machineries as well as the actual construction will generate excessive dust on site and the surrounding area
- Excessive dust is also envisaged during high wind conditions
- Release of vapours into the surrounding environment during the refuelling, fuel spillage and motor vehicle exhausts.
- Construction and movement of construction machineries will create excessive noise which might become nuisance to the surrounding communities

Impact that may arise during operational phase

No impact envisaged

Archaeology/ Heritage

Impact that may arise during construction phase

- No visible heritage and archaeological resources will be impacted upon by the proposed development. However heritage resources that might be buried underground may be impacted upon during excavations

Impact that may arise during operational phase

- None envisaged

Visual/Aesthetic

Impact that may arise during construction phase

- Littering and illegal dumping on the site may result in an alteration of the visual character of the site which is already compromised due to illegal dumping and littering occurring on site
- Loss of vegetative cover

Impact that may arise during operational phase

- The new infrastructures will be permanent

Socio Economic

Impact that may arise during construction phase

- There will be temporary and permanent job creation during construction and operation of the proposed development. Local people will be considered for employment.
- Business opportunities for informal traders
- Skills transfer to those who will be employed during the construction activities
- Improved road conditions to road users

Impact that may arise during operational phase

- Improved road conditions to road users

Construction Traffic

- Increased traffic congestion as a result of construction vehicles

Impact that may arise during operational phase

- Increased traffic congestion as the applicant intend to utilize the road proposed for upgrade as main entrance to the University campus

Health, Safety and Security

Impact that may arise during construction phase

- Construction sites may attract large numbers of people who may gather around the site and as such pose safety risks in the area. Criminals may utilise the opportunity to steal items from the site
- Transfer of flammable liquids has the potential to impact on the safety of those onsite or immediately surrounding the site, should there be an accident, spillage or fire.

Impact that may arise during operational phase

- None envisaged

Cumulative Impacts

Surface disturbance

- The proposed project will increase the disturbed area although it will be undertaken with the road reserve.
- Increase wetland modification which is already impacted upon by the existing road which cut across Mvudi River.

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 proposed development will have direct negative ecological impacts, with vegetation clearing leading to habitat loss and the most important potential impacts on the riparian vegetation leading to alteration of the physical components of wetland ecosystems and accumulation of sedimentation within the wetland due to soil erosion, modification of water flow and chemistry. The construction of the proposed access road parallel to the existing alignment from R524 to the river where the portion of land falls within Ecological Support Area 2 will have moderate to low impact, whereas the development from the river to the University campus which is within Critical Biodiversity Area 1 will have high significance impact on the environment. Although the wetland has already been impacted upon by the existing infrastructures, biodiversity on the proposed area for the bridge is considered near natural state.
- Possible soil and water contamination as well as excessive dust and noise envisaged for a short duration, however through correct implementation of recommended mitigation measures, the impacts can be reduce to minimal.
- It is also noted that the proposed development will bring positive impact to the society in the form of job creation during construction and operational phase and contribute to socio economic upliftment of the area.
- University communities and other road users will access to improved road condition.

No-go alternative (compulsory)

- The road remains undeveloped and safety hazard to the students and university community at large. The University will not be able to utilize the proposed road as the main gate and traffic and safety of the current main gate remains a concern. The No-Go option is not considered the best alternative by the Applicant

Alternative B

Alternative C

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	
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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:

Biodiversity and soil management

Mitigation Measures:

- The ECO must conduct regular site inspections prior to clearing.
- Employees and contractors should be made aware of the presence of, and rules regarding, flora and fauna through suitable induction training and on-site signage
- The unnecessary removal of vegetation should be avoided and should not extend beyond the perimeters of the construction footprints. Permission shall be sought from ECO before any vegetation clearing commences.
- Medicinal and other indigenous trees of significance should be protected where necessary.
- Tall shrubs on site should be incorporated into the design/layout plan for shade purpose
- Medicinal plants can be translocated during construction and replanted
- The removal of vegetation should be kept to a minimum.
- Unnecessary driving around in the veld or bulldozing natural habitat must not take place.
- Do not disturb nests, breeding sites or young ones. Do not attempt to kill or capture snakes unless directly threatening the safety of employees.
- No animals should be intentionally killed or destroyed and poaching and hunting should not be permitted on the site.
- Contract employees must be educated about the value of wild animals and the importance of their conservation
- Slopes produced by the removal of soil must be kept to a minimum to reduce the chances of erosion damage at construction sites.
- Movement of vehicles shall be restricted to demarcated area.

- Construction during rainy and windy days should be avoided to minimize compaction of areas outside the project boundaries
- Measures must be implemented to stabilize soil in all disturbed areas
- Topsoil should be handled twice only - once to strip and stockpile, and secondly to replace, level, shape and scarify.
- Topsoil should not be compacted in any way, nor should any object be placed or stockpiled upon it.
- Stockpile in an area that is protected from storm water runoff and wind.
- Topsoil stockpiles should not exceed 1.5 m in height and should be protected by a mulch cover where possible.
- Stockpile topsoil for the minimum time period possible i.e. strip just before the relevant activity commences and replaced as soon as it is completed.
- Measures shall be put in place to channel storm water away from stockpile areas
- Disturbed areas surrounding the project site shall be rehabilitated to avoid alien invasion
- Alien control program shall be introduced through project cycle, starting with the eradication of alien plants found on site
- Vehicles shall be parked within demarcated area to minimize soil contamination and compaction

Ground and Surface Water

Mitigation Measures:

- No construction shall take place within a watercourses without approval by DWS
- Aligning the proposed bridge to the existing bridge.
- Construction across wetlands/riparian areas should be restricted to low flow period (dry winter season)
- Ensure that construction activities are carefully monitored to limit unnecessary impacts to wetlands/riparian areas (particularly in-stream habitat) and should be approved by WUL.
- Do not lower the original stream bed / profile of the wetland/river, when constructing the bridge, as this may result in scouring in an upstream direction and further alteration of bed conditions.
- Ensure that coarse immovable material including boulders and other rock in river channels is reinstated/rehabilitated to ensure continued stability and functioning of the river systems. River sediments should not be permanently removed from the system in any case. Rehabilitation of the river and wetland as soon as construction is completed.
- Construction vehicles and machinery must be well maintained to prevent oil and fuel leaks. Spill trays must be

placed under stationary machines. Spill kits must be kept on site and staff must be trained in the correct use of these kits.

- No maintenance of construction machineries shall take place on site. Spill trays must be used during repairs of construction vehicles or machines.
- No refueling of vehicles and machineries on site.
- Ensure that all hazardous material are properly stored in a designed area which banded, outside 100 year floodline or 50m away from the watercourse
- An emergency management procedure which includes spill response must be prepared and kept onsite
- Staff must be trained to implement the emergency management procedure;
- Used oil must be taken to the nearest approved oil refiner or fuel recycling point for recycling and must not be stored for extended periods within the site camp.
- The location for the site camp must be carefully selected at least 100 meters away from the water courses
- Construction activities in river and wetlands should proceed during the dry winter months (low or zero flow periods) in order to limit the potential for erosion linked to high runoff rates.
- Water quality shall be monitored by a qualified Environmental Officer.
- Excavated and imported material should be stored away from the river banks /areas of concentrated flow to limit the risk of sediment wash to downstream areas.
- Any topsoil removed from wetlands must be stockpiled separately from subsoil material and replaced once construction is complete to facilitate re-colonization of the site.
- Operation and storage of machinery and construction-related equipment must be done outside of wetlands and rivers wherever possible, unless authorised by a WUL.
- Toilets should be located outside of the 1:100 yr. flood line of a watercourse or 50m or from any natural water bodies including streams and wetlands. Waste from chemical toilets should be disposed of regularly and in a responsible manner by a registered waste contractor.
- A sufficient number of wind and animal proof waste bins must be allocated. The contractor must ensure that these waste bins are emptied at a licensed landfill site on a weekly basis
- The site should be shaped in order that proper surface drainage and storm water management would be

effective and water should not pond after heavy rains

Water Use

Mitigation Measures:

- Water (for drinking, cooking, dust suppression and construction purposes) should not be wasted and construction workers must be educated on the value and importance of water.
- No water can be abstracted from a water source, i.e rivers, streams, ground without a permit being obtained from **Department of Water and Sanitation (DWS)**.
- Record water consumption during construction phase
- Water shall be utilized wisely to minimize water usage

Waste Management

- Suitable waste storage containers shall be provided on site to prevent littering and illegal dumping
- Waste storage areas shall be clearly demarcated and colour coding waste skips must be allocated for waste separation
- Mixing of concrete shall be done on impermeable surface
- Concrete, cement, and masonry products may never be discharged into the storm drain system
- Effluent from these process shall be contained to prevent surface and groundwater
- Mobile ablution facilities shall be maintained according to manufacturer by an approved contractor
- Contaminated soil from fuel leaks and contaminated waste shall be cleaned up immediately by either bioremediation or removed from site and disposed as hazardous waste to an approved landfill facility by an approved contractor
- Hazardous waste shall be collected in suitable containers which must always be sealed and stored in a designated area prior to disposal
- Employing the services of registered waste transporter contractor to collect and dispose hazardous wastes to an approved landfill site for hazardous waste
- Waste shall be removed for disposal on a weekly basis to minimize bad odour and breeding ground for diseases
- Waste disposal manifests and safety disposal certificate for hazardous waste must be kept of all solid waste that is disposed of at a registered landfill site or sent for recycling
- Recycling of waste shall be encouraged

- No burying or burning of waste on site

Air and Noise Pollution

Mitigation Measures:

- Vegetation clearing shall be done in phases so as to minimize the time which the stripped areas are exposed
- The cleared topsoil must be stockpiled in such a way that transportation by wind is limited. This can be done by restricting the height of stockpiles to 1.5m.
- Construction areas must be dampened to prevent excessive dust formation, especially during the winter months (dry and windy conditions)
- Excavations shall not be done during excessive wind
- No domestic waste or cleared vegetation may be burned at the site
- Construction vehicles and machinery must be well maintained (serviced) to reduce excessive emissions during operation.
- No open fires shall be allowed on site.
- All material loads should be adequately covered during transportation
- Contractors must comply with Provincial Noise Regulations /or Local Municipal By-Laws.
- The contractor must ensure that construction activities are limited to hours of daylight during weekdays (07:00-17:00) and 08:00-14:00 on Saturdays, Sundays and public holidays.
- Proper equipment and vehicle maintenance must be implemented on a regular basis to keep noise levels to acceptable levels.
- Public to be notified in advance of any activities that will be undertaken which might cause excessive noise generation

Archaeology/Heritage Resources

Mitigation Measures:

- Prior to construction, contractors should be given training on how to identify and protect archaeological remains that may be discovered during the project.
- In the event that any of the above are unearthed, all construction within a radius of at least 10m of such indicator should cease and the area be demarcated by a danger tape. Accordingly, a professional archaeologist or SAHRA officer should be contacted immediately
- Any measures to cover up the suspected archaeological material or to collect any resources is illegal and punishable by law
- No person may exhume or collect such remains, whether of recent origin or not, without the endorsement by LIHRA/ or SAHRA

Visual/Aesthetic and Landscape Character

Mitigation Measures:

- The site shall be kept visually and aesthetically pleasing, especially in and around the construction camp
- Material and stockpiles must not be higher than 1.5 m
- Removal of vegetation must be limited to the actual construction footprints.
- Waste collection bins shall be used for solid waste disposal
- Litter and solid construction waste must be removed and disposed of on a weekly basis at the licensed landfill
- All temporary stockpile areas including litter and rubble must be removed on completion of construction
- No dumping of construction material in the bush or watercourses shall be allowed

Socio Economic

Mitigation Measures:

- Local people must be given first preference wherever possible during recruitment process
- Source supply material from the local supplier where possible

Traffic

Mitigation Measures:

- Movement of heavy vehicles to and from the site should be conducted during periods of the day when peak flow is minimal.
- Erect visible warning signs in the vicinity of the project site

Health, Safety and Security

Mitigation Measures:

- The local residents must be informed of the construction works 3-4 weeks before commencing with the project as well as how construction will take place.
- The contractor shall conform to all the stipulations of the Occupational Health and Safety act and the applicable Regulations
- An environmental awareness training programme for all staff members shall be put in place by the Contractor and all staff members shall be briefed about the EMPr and relevant occupational health and safety issues

before commencing with any work,

- Barrier tape should be provided around construction site to prevent unauthorized access and safety risks
- Signboards must be provided at the entrance and exit of the project site as a caution to motorists and pedestrians of potential risks.
- The storage of oils, materials, chemicals, fuels, etc. to be used during the construction phase must not pose a risk to the surrounding environment; such storages must be bunded to contain possible spillages.
- Make use of suitable containers for hazardous waste storage
- Weekly removal of waste to ensure that it doesn't cause bad odour and also becomes a breeding ground for diseases.
- The Contractor must have a basic spill control kit available at the construction site
- Warning signs or notices must be displayed in potentially dangerous areas (e.g. no smoking), in accordance with the requirements of SABS 1186.
- Emergency response procedure shall be made available on site. Fire service and other emergency numbers must also be displayed at the site
- Firefighting equipment must be readily available on site and in good working condition.
- Personnel must be given the appropriate training in the use of the firefighting equipment, first aid and other emergency procedures.
- Ensure that trained first aid personnel are available on site at all times to handle emergencies
- First Aid kit must be available on site
- A system must be put in place to record any incidents and/or accidents;
- All vehicles and equipment used on site must be operated by appropriately trained and licenced employees
- Provide safe and hygienic ablution for the construction workers at the site
- Employees must be provided with necessary Personal Protective Equipment
- The Contractor must provide safe drinking water on site and suitable ablution facilities

Is an EMPr attached?

The EMPr must be attached as Appendix F.

YES	
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SECTION F: APPENDIXES

The following appendixes must be attached as appropriate:

Appendix A: Site plan(s)

Appendix B: Photographs

Appendix C: Facility illustration(s)

Appendix D: Specialist reports

Appendix E: Comments and responses report

Appendix F: Environmental Management Programme (EMPr)

Appendix G: Other information

SECTION G: DECLARATION BY THE ENVIRONMENTAL ASSESSMENT PRACTITIONER

I, _____ 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, 2010;
- (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:

Mawedza Geo-Environmental Consulting (PTY) LTD

Name of company:

Date: 21/01/2020