



HANSLAB (PTY) Ltd
ENVIRONMENTAL AND GROUND
ENGINEERING SPECIALIST

SITE INVESTIGATION REPORT:
CONSTRUCTION OF NTUMBA VEHICULAR/PEDESTRIAN
BRIDGE ACROSS A STREAM IN ROOKDALE,
OKHAHLAMBA LOCAL MUNICIPALITY



PREPARED ON BEHALF OF:

**ECA CONSULTING
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1. BACKGROUND

The Okhahlamba Local Municipality identified the need for a vehicular/ pedestrian bridge across a stream in Brookdale, Bergville, KwaZulu-Natal. A feasibility study was undertaken by the applicant, that included a topographical survey and geotechnical investigation. The results of the investigations were thereafter utilised to determine the most cost-effective way to construct the proposed bridge crossing. **It should be noted that the upgrade of the access roads leading to the bridge does not form part of the scope of works.**

The following recommendations were proposed for the bridge construction:

- Construct a Low-Level River Crossing Culvert Structure
- Protection Gabions and Reno Mattresses

2. INTRODUCTION

A Site Investigation is the process of collecting information, assessment of the data and reporting potential hazards within a site which is unknown (O'Brien & Gere, 2011). A site investigation/ assessment is an environmental management tool that highlights potential ecological issues or constraints in relation to a proposed development (Perry, 2011). A site investigation forms part of the screening phase of a project. Screening is a decision-making process which determines whether a development/proposed activity requires an environmental assessment and if so, the level of assessment (DEAT, 2002).

Hanslab (Pty) Ltd. was appointed by the Applicant (ECA Consulting) to undertake a site visit for the proposed construction of a vehicular/ pedestrian bridge over an unnamed stream in the Rookdale area, within the Okhahlamba Municipality, KwaZulu-Natal.

The aim of the site investigation was to determine whether the proposed development requires an environmental assessment. The objectives of the site investigation include:

- To identify the need for the proposed development.
- To identify and determine activities that may trigger listed activities in terms of the EIA Regulations, 2014 as amended (07 April 2017).

3. METHODOLOGY

The methodology followed for conducting this site investigation report included:

1. Compilation of an environmental site-visit checklist. The site visit checklist included the basic information which was required to make the initial site visit. It also included information regarding the existing road/tracks and any watercourses which were observed. The purpose of the site-visit checklist was to record all observations and findings after the site visit/site walk-over.
2. Site Visit/Site Walk-Over (Conducted on 1st February 2018). This site visit/walkover was conducted with a representative of ECA consulting (Mr. Khumbulani Msane). Refer to **Appendix B** – Site Register.
3. Taking site photographs for environmental evaluation. This will further be used in conjunction with the environmental management tools for the desktop analysis.
4. Desktop analysis using environmental management tools i.e. Google Earth, KZN Department of Transport GIS software, SANBI BGIS (2018), and ArcGIS (Version 10.5.1).

5. PROJECT DESCRIPTION & LOCATION

The Applicant (ECA consulting Engineers) proposes to construct a vehicular/pedestrian bridge over an unnamed stream within the Rookdale area, Okhahlamba Local Municipality, KwaZulu-Natal. The design specifications are to be confirmed and it should be noted that the design of the proposed structure is still in the planning phase. However, the project engineer has confirmed that the physical footprint of the structure will be >100m² and will take place over the unnamed stream, and >15m³ of soil will be removed from the watercourse, and therefore triggers Activity 12 and 19 of Listing Notice 1 of the EIA Regulations, 2017, as amended (07 April 2017).

The location of the proposed construction of Ntumba Culvert Bridge will take place within the Ntumba area, Rookdale in ward 10 of Okhahlamba local Municipality, within Uthukela District Municipality. The site is located 13km West of Bergville town with coordinates as follow:

28° 42' 48.9" S and 29° 13' 44.5" E.

The location of the project is depicted in Figure 1 & 2 below.



Map: Aerial Map
Project: Ntumba River Bridge
Scale: 1: 20 000

Legend

- Proposed Ntumba River Bridge
- Watercourses
- Major Rivers
- Minor Rivers

Wetland Classification

- Bench, Flat
- Slope, Seep
- Slope, Valleyhead seep
- Valley floor, Channelled valley-bottom wetland

0 255 510 1 020 1 530 2 040 Meters



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Figure 1: Aerial map of the proposed development site. (Source: ArcGIS Ver 10.5.1)

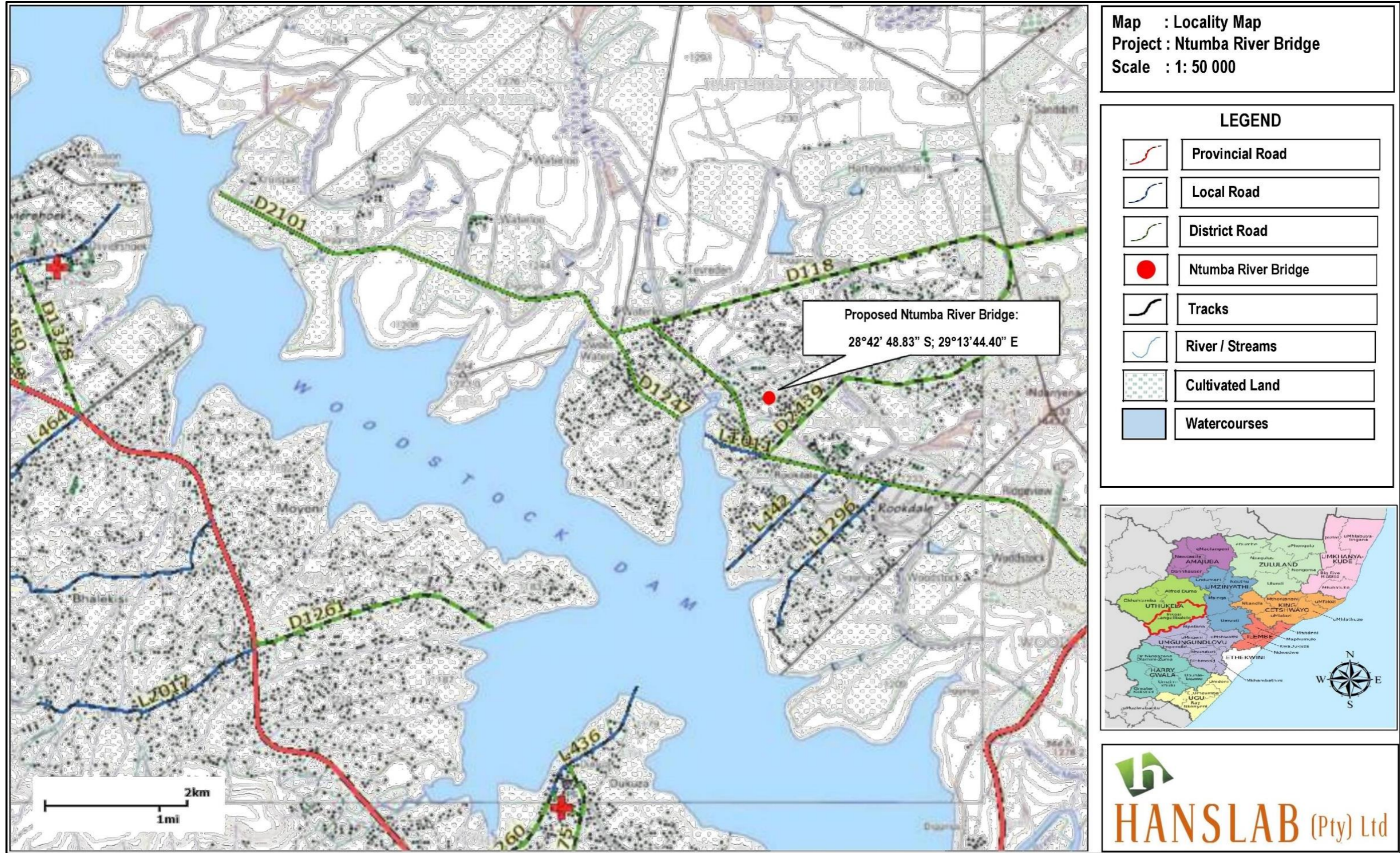


Figure 2: Locality map of the proposed development site. (Source: KZN DoT GIS, 2018)

6. SITE DESCRIPTION

The description of the site is based on the observations made during the initial site-visit and the confirmation of observations during the desktop analysis.

6.1. Site Visit

The following observations were made during the initial site visit:

– **Existing Roads:**

The proposed bridge alignment is currently used as a crossing point by villagers and will interlink two roads (**D2439 & D2101**) in future. The proposed site is currently accessible via District Road D2439.

– **Watercourses:**

The current crossing is classified as a stream, which is unnamed at present.

– **Fauna & flora:**

Vegetation within the immediate proposed site consists mainly of grass species. The vegetation sensitivity of the area will be confirmed by the Wetland specialist, and wetlands will also be confirmed. With regards to faunal life, there local residents are located in close proximity to the site and have cattle that graze within the proposed site.

– **General observations:**

- The topography of the site is undulating and very steep.
- There are several schools in the Rookdale area, that use the crossing point.
- Residents were observed crossing the river, and the river was flowing at a fairly rapid rate.

7. PROPERTY DESCRIPTION

PROVINCE	KwaZulu-Natal	
DISTRICT MUNICIPALITY	uThukela Municipality	
LOCAL MUNICIPALITY	Okhahlamba Local Municipality	
WARD NUMBER(S)	10	
FARM PARENT AND NUMBER	SURVEYOR GENERAL CODE	PORTION NUMBER
Crowfield 8854	NOGS 00000000 885400080	8854
	NOGS 00000000 885400081	8854

8. NEEDS & DESIRABILITY OF THE PROPOSED DEVELOPMENT

The proposed new bridge will serve the local communities on either side of the stream, within the Rookdale area, Okhahlamba Municipality. The stream flows into the adjacent Woodstock Dam, and the flow increases compared to any other river in KwaZulu-Natal, especially during the rainy seasons.

- During these periods, it is impossible to cross the river and the local residents are forced to commute long distances to get to work, school and other facilities. Many have risked their lives attempting to cross the river during floods with little success.
- A major beneficiary will be the large number of school children who risk their lives to cross the river so that they can attend schools on the opposite side.
- Children are presently using a make-shift floatation device which is extremely dangerous especially during rain events.

4. CONCLUSION

The proposed project is part of the Ministers social upliftment plans for the local communities and the overall improvement to the Province of KwaZulu-Natal. Therefore, Hanslab (Pty) Ltd makes an appeal to AMAFA as the commenting authority to consider this during the assessment of the information related to this project.

5. REFERENCES

- DEAT. (2002). Screening, Information Series 1, Department of Environmental Affairs and Tourism (DEAT)
- O'Brian & Gere. (2011). Geophysical/Geotechnical Environmental Investigation: Restoration Project
- Perry, B. (2011). Environmental Investigation Report.