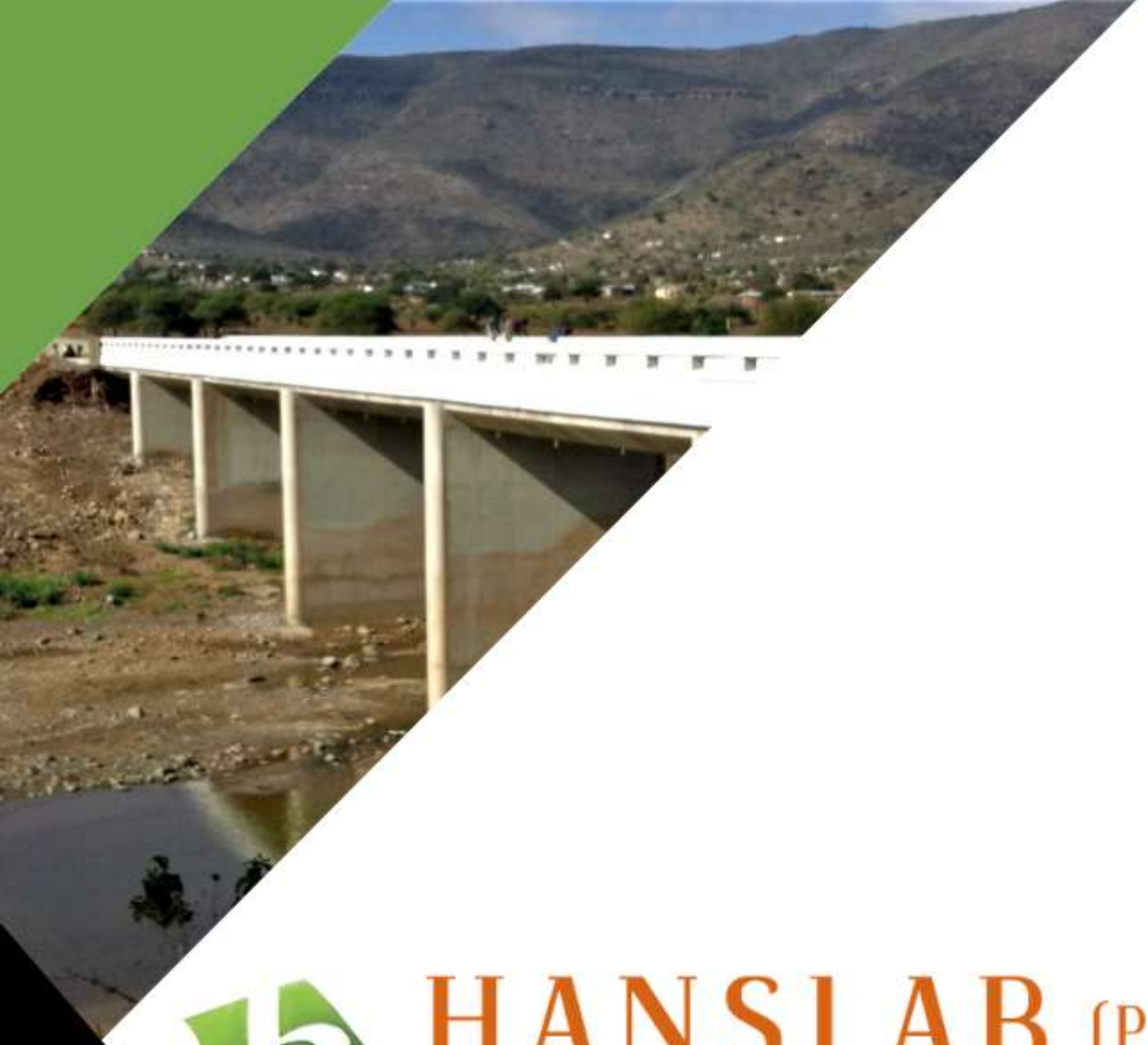

Level 1 BBBEE

HANSLAB (Pty) Ltd

Environmental and Ground Engineering Specialists

Kwambushumbushu River Causeway (Across D1240)

Inkosi Langalibalele Local Municipality

Site Investigation Report

Reference No.: D1240/SIR/001

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DOCUMENT CONTROL					
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Report Reference		D1240/SIR/001	**Responsible Person**	Mr. Robert Ndlela	
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Revision	**Date**	**Revision Details/ Status**	**Author**	**Review No.01**	**Review No.02**
0	13/06/2019	Site Investigation Report	C.E. Singh	J. Maharaj	L. Moodley
1	25/06/2019				

Current Revision	**Date**
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APPROVAL				
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1. INTRODUCTION

A Site Investigation is the process of collecting information, assessment of data and reporting potential hazards within an unknown site (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 defined by the Department of Environmental Affairs and Tourism (EDTEA) as a decision-making process which determines whether a development/proposed activity requires an environmental assessment and if so, the level of assessment. According to Sadler (1996), screening is a process involving the determination of whether an individual proposal (project, programme, policy etc.) requires further environmental assessment.

2. METHODOLOGY

The methodology followed for conducting this site investigation report included:

1. Desktop analysis using environmental management tools i.e. Google Earth, DOT GIS, SANBI BGIS & ARCGIS v10.5.1.
2. A Site Visit/Site Walk-Over (Conducted on the 11th June 2019). **Refer to Appendix A– Site Register**.
3. Photographing of the site for environmental evaluation. This will further be used in conjunction with the environmental management tools for the desktop analysis. **Refer to Appendix B – Site Photographs.**

3. BACKGROUND INFORMATION

Hanslab (Pty) Ltd. was appointed via Nankhoo Engineers (Engineering Consultant) on behalf of the KwaZulu-Natal Department of Transport (Applicant) as the Environmental Consultant for the project. The project involves the construction of a causeway structure over the Kwambushumbushu River along a portion of District Road (D1240).

There is an existing structure (2no. x 600mm pipe culvert structure) located at the crossing point. The existing infrastructure is ineffective/ eroded and therefore needs to be upgraded to one that is more appropriate. The Applicant proposes to install a 2no. x (3.5m x 2.5m) box culvert structure with headwalls over the river. The upgrade will also include the tie-end of the roads on either side.

4. PROJECT LOCATION

The location for the proposed causeway site will fall under the jurisdiction of the Inkosi Langalibalele Local Municipality .The causeway location is over the Kwambushumbushu River and can be accessed via the Department of Transport Cost Centre Estcourt region. From 1 Lorne Street, Head west onto P29 (R103) towards Lorne street about 22km, turn left onto P379 and drive for 13km. Turn left onto P28-1 and drive about 3km and turn right to D1240. Drive about 8km and you will reach the site on D1240.

Refer to Figure 1 and Figure 2 showing the Aerial and Locality Maps for the project.

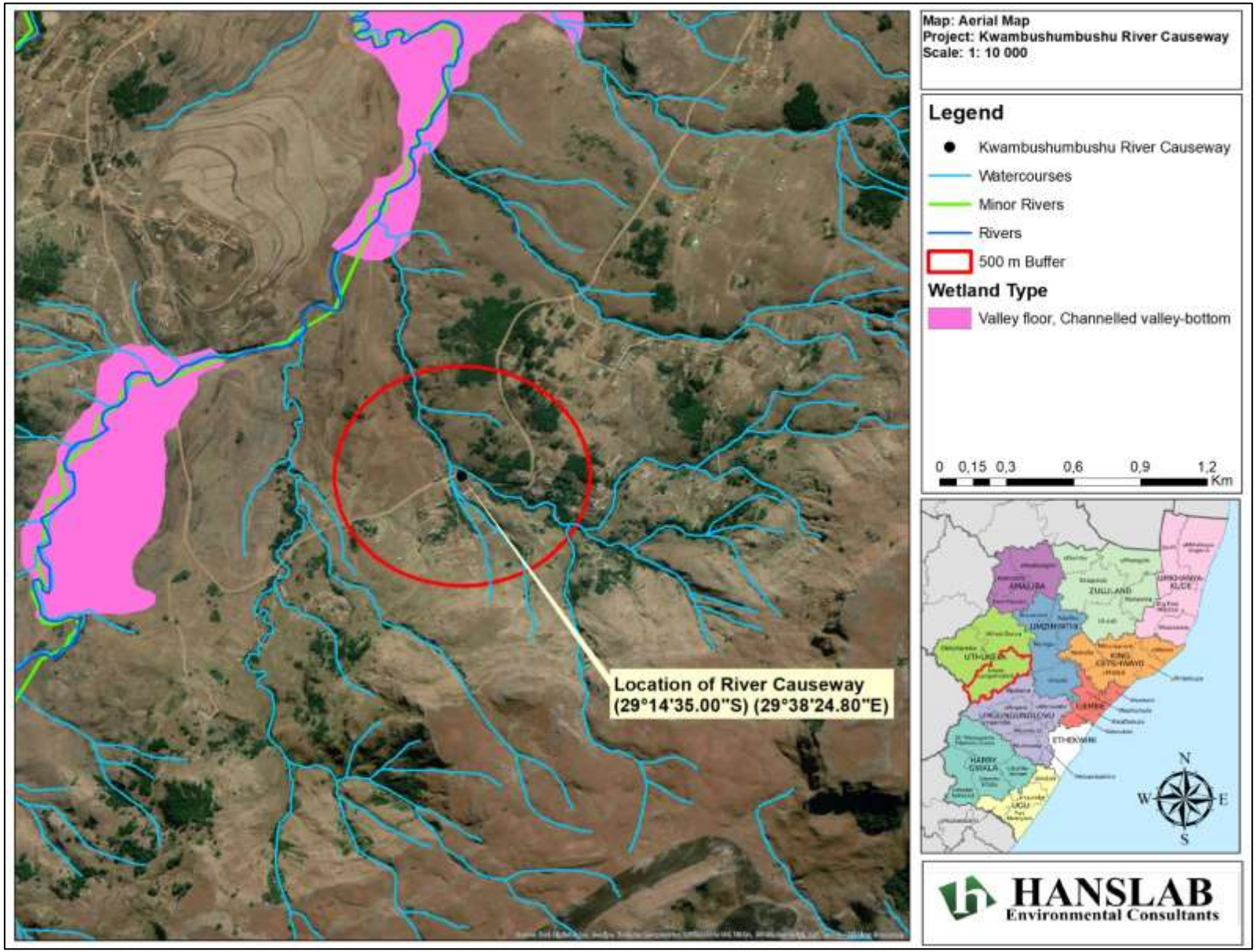


Figure 1: Aerial Map showing the proposed Kwambushumbushu River Causeway (*Source: ArcGIS version. 10.5.1*)

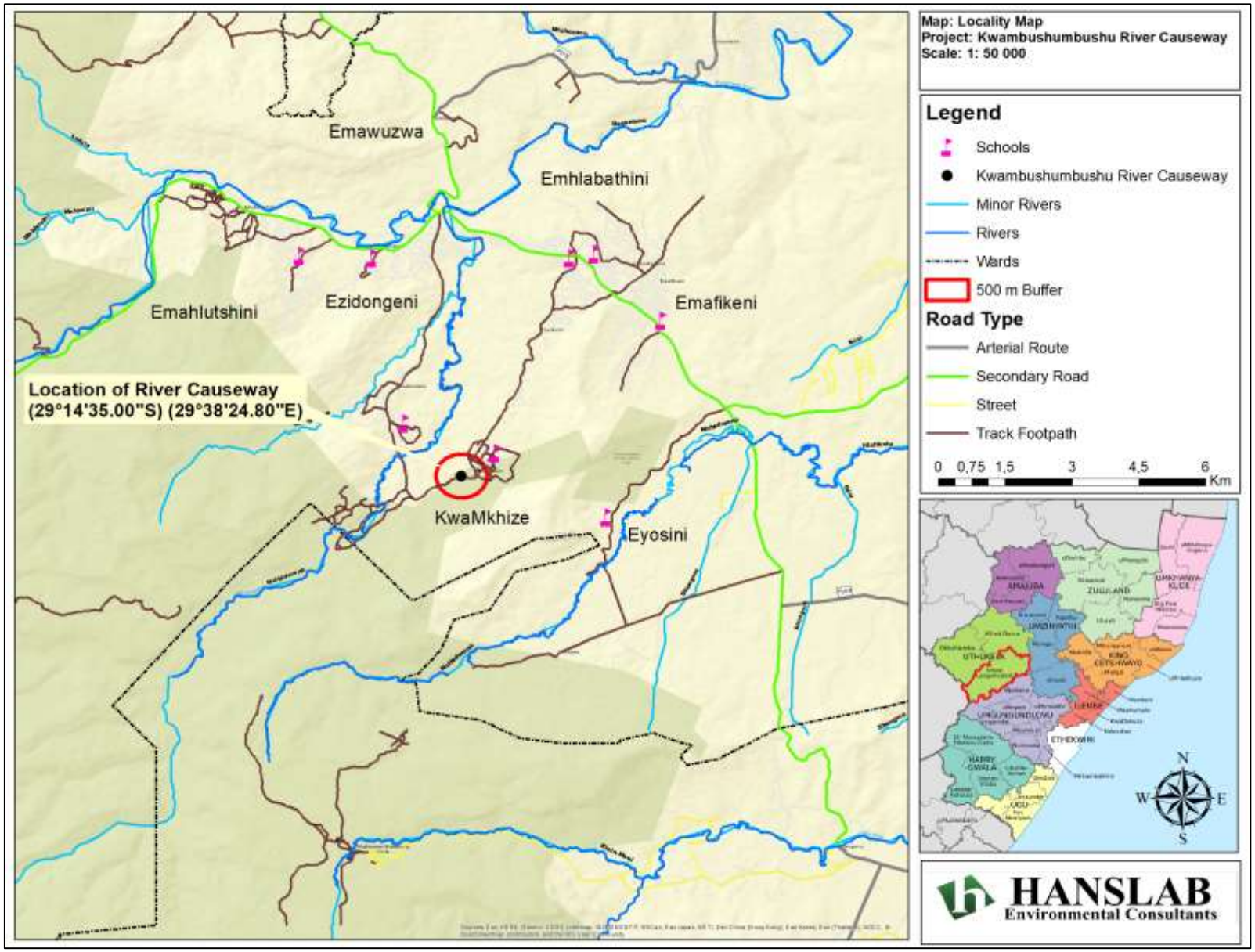


Figure 2: Aerial Map showing the proposed Kwambushumbushu River Causeway (*Source: ArcGIS version. 10.5.1*)

5. SITE DESCRIPTION

5.1. DESKTOP ANALYSIS

5.1.1. Existing Roads/ Routes

Google Earth and Arc GIS version 10.5.1. confirmed that the site can be accessed via D1240. Using these various screening tools, other tracks were also observed in the area. The crossing point can be clearly seen on both Google Earth and ArcGIS.

5.1.2. Watercourses

Several drainage lines and watercourses were observed on Google Earth and Arc GIS. These watercourses form part of a dendritic structure.

5.1.3. Vegetation

The area surrounding the causeway location is surrounded with both tree and grass species. Google Earth indicates growth in what can be understood to be a riparian area.

Refer to Table 1 below showing the location of the proposed Causeway Structure over the Kwambushumbushu River.

Table 1: Showing the co-ordinates of the proposed Causeway structure over the Kwambushumbushu River.

Feature	Latitude	Longitude
2No. x (3.2m x 2.5m) causeway structure	28°14’35.00’’S	29°38’24.80’’E

5.2. SITE VISIT

5.2.1. Existing Roads/ Routes

All roads leading to the site were accessible. The tracks that were observed on Google Earth and ArcGIS appeared to be created by locals wishing to gain access to more areas. The proposed location on situated on a "U" shape bend with a gentle topographic gradient. Due to the position of the structure along D1240, tying in of the road will be required.

The existing structure present at the crossing point is damaged and eroded. Furthermore, debris was observed at the outlet pipes, preventing water to flow further downstream.

Photograph 1: Showing the existing structure present at the crossing point.

Photograph 2: Showing the blocked existing structure.

Photograph 3: Showing the outlet pipe of the existing structure.

5.2.2. Watercourses

The watercourse was observed to have periodic flow (No.01 watercourse identified). Flow within the watercourse varies based on the rainfall duration and intensity. The watercourse extends further downstream, creating a larger habitat for both plant and animal life. Furthermore, there is a minor drainage line located approximately 50m before the identified watercourse.

Photograph 4: Showing the upstream view of the Kwambushumbushu River.

Photograph 5: Showing the downstream view of the Kwambushumbushu River.

Photograph 6: Showing the upstream view of the minor drainage line encountered along D1240.

5.2.3. Vegetation

Riparian vegetation was observed on either side of the banks (both upstream and downstream). During the construction phase, there is a possibility that vegetation may be required, however, the contractor should adhere to the designs and inform the ECO accordingly.

Photograph 7: Showing vegetation associated with the Riparian Area.

Photograph 8: Showing vegetation associated with the Riparian Area.

6. PROPOSED ENVIRONMENTAL TRIGGERS

Table 2: Showing the details of Activity 12 (EIA Regulations, 2014 as amended).

No. & Date of Notice	Activity No. in terms of Notice	Activity Description
GNR 327, Listing Notice 1 of 2014, as amended	Activity 12 as amended on the 07th April 2017. ***The development of –*** *(i) Dams or weirs, where the dam or weir, including infrastructure and water surface area, exceeds 100 square metres; or* ***(ii) infrastructure or structures with a physical footprint of 100 square meters or more;*** *where such development occurs—* ***(a) within a watercourse*** *(b) in front of a development setback; or* *(c) if no development setback exists, within 32m of a watercourse,* *excluding—* *(aa) the development of infrastructure or structures within existing ports or harbours that will not increase the development footprint of the port or harbour;* *(bb) where such development activities are related to the development of a port or harbor, in which case activity 26 in Listing Notice 2 or 2014 applies;* *(cc) activities listed in activity 14 in Listing Notice 2 of 2014 or activity 14 in Listing Notice 3 of 2014, in which case that activity applies;* ***(dd) where such development occurs within an urban area;*** *(ee) where such development occurs within existing roads, [or] road reserves or railway line reserves; or* *(ff) the development of temporary infrastructure or structures where such infrastructure or structures will be removed within 6weeks of the commencement of development and where indigenous vegetation will not be cleared.*	The Applicant proposes to construct a new causeway structure over the Kwambushumbushu River located along District Road (D1240). **The structure will be approximately 21.7m wide and 16.3m in length with an approximate physical footprint of 354.57 square meters.** **The physical footprint of the structure is greater than 100 square meters, therefore triggering Activity 12.** **Exclusions** The proposed development does not: aa) occur within a port/ harbour; bb) is not related to an activity related to the development of a port/ harbour; cc) trigger activity 14 in Listing Notice 3 of 2014; dd) occur within an urban area; ee) occur within existing road / road reserves or railway line reserves; ff) form part of temporary infrastructure.

Table 3: Showing the details of Activity 12 (EIA Regulations, 2014 as amended).

No. & Date of Notice	Activity No. in terms of Notice	Activity Description
GNR 327, Listing Notice 1 of 2014, as amended.	Activity 19 as amended on the 07 April 2017. ***The infilling or depositing of any material of more than 10 cubic metres into, or the dredging, excavation, removal or moving of soil, sand, shells, shell grit, pebbles or rock of more than 10 cubic metres from a watercourse;*** *but excluding where such infilling, depositing, dredging, excavation, removal or moving—* *(a) will occur behind a development setback;* *(b) is for maintenance purposes undertaken in accordance with a maintenance management plan;* *(c) falls within the ambit of activity 21 in this Notice, in which case that activity applies;* *(d) occurs within existing ports or harbours that will not increase the development footprint of the port or harbour; or* *(e) where such development is related to the development of a port or harbour, in which case activity 26 in Listing Notice 2 of 2014 applies*	The Applicant proposes to construct a new causeway structure over the Kwambushumbushu River located along District Road (D1240). **The construction of the causeway structure will require the removal of approximately 24 cubic meters of soil from the watercourse.** **The amount of soil removed is greater than 10 cubic meters, therefore triggering Activity 19.** **Exclusions** The proposed development: a) will not occur behind a development setback; b) is not for maintenance purposes; c) does not fall within the ambit of activity 21; d) does not occur within an existing port/ harbour; e) is not related to the development of a port or harbour.
Possible Trigger Pending confirmation/ verification		
GNR 324, Listing Notice 3 of 2014, as amended.	Activity No.14 as amended on the 07 April 2017. The development of: i) infrastructure or structures with a physical footprint of 10 square metres or more Where such development occurs- (a) within a watercourse	A protected area is located within 10km the area surrounding the development. Once the relevant specialists are appointed, this trigger will be verified.

7. NEED FOR DEVELOPMENT

The KwaMankonjane, Emahlutshini, and KwaMkhize communities will benefit from the proposed D1240 vehicle river causeway structure. The proposed crossing point will provide a crucial link between these communities in order to access the following necessary amenities:

Schools:

- Insonge Primary School;
- Zumukwazi Primary School;
- Ncibidwane Primary School;
- Mkhize Primary School.

Clinics:

- Ncibidwane Provincial Clinic

Building the causeway structure will provide the community with a much easier route to their desired locations. Government officials have indicated that members of the community are left stranded during periods of high rainfall. The existing crossing point has no formal / safe means of crossing during flooding. Therefore, community members wait a long period for the floods to subside before crossing. The Proposed causeway will also promote public transport and development in the surrounding areas. The construction process will also increase employment locally and provide skills development

8. CONCLUSION

This Site Investigation Report has indicated that the proposed upgrade is located along a portion of District Road (D1240). The upgrade is essential for the provision of services to the local community. The construction of the causeway structure will potentially trigger Activity No. 12 & 19 – Listing Notice No.01 (EIA Regulations, 2014 as amended).

Therefore, a Basic Assessment Application in terms of the EIA Regulations, 2014 and a Water Use License Application in terms of the National Water Act (NWA) will be required.

9. REFERENCES

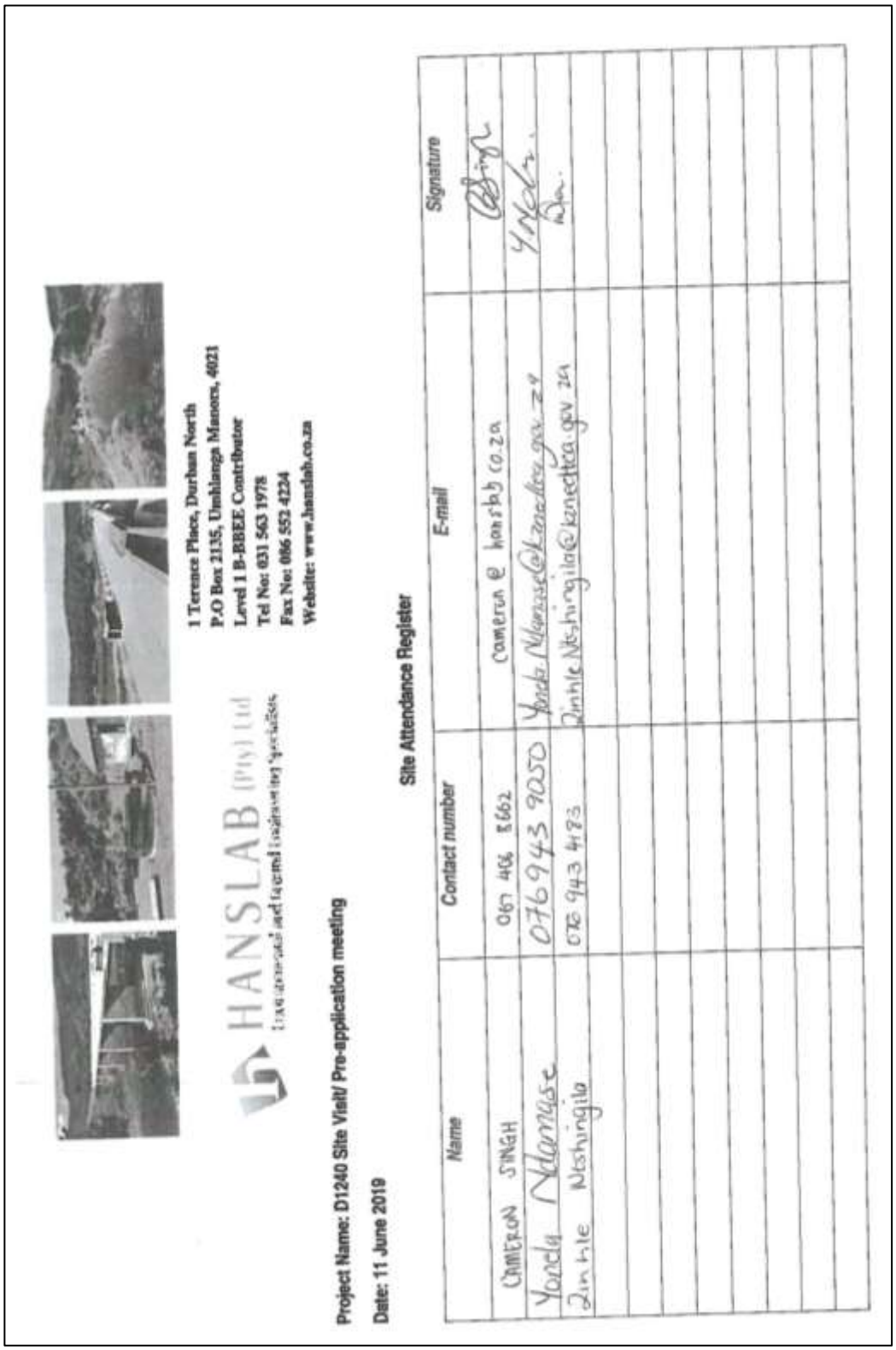
O'Brian & Gere. (2011). Geophysical/Geotechnical Environmental Investigation: Restoration Project.

Perry, B. (2011). Environmental Investigation Report.

Sadler, B. (1996). Environmental Assessment in a Changing World: Evaluating Practice to improve Performance, Final report of the international study of the effectiveness of environmental assessment, International Association for Impact Assessment, Canadian Environmental Assessment Agency, Ottawa, Canada.

10. APPENDICES

10.1. APPENDIX A – Site Attendance Register



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Project Name: D1240 Site Visit/ Pre-application meeting

Date: 11 June 2019

Site Attendance Register

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