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Classification:	Project related		

**INTERPRETATION QUERY FOR THE PROPOSED REHABILITATION OF PROVINCIAL ROAD (P) 230 FROM KM 37.0 TO KM 47.0, UMKHANYAKUDE DISTRICT**

**1. Introduction and Background**

Royal HaskoningDHV has been appointed by the KwaZulu-Natal Department of Transport (KZN DoT) to provide Engineering Consulting Services for the proposed rehabilitation of Provincial Road P230. This project forms part of the Empangeni Road Rehabilitation Programme and covers the rehabilitation of the P230 between km 37,0 (intersection with P393) and km 47,0 (Empangeni). Main Road P230 links Richards Bay through Empangeni via the P393 and the P47 (R34) with Vryheid and also serves as part of a vital route between the Richards Bay harbour through Northern KwaZulu-Natal and on to Mpumalanga. A number of abnormal loads also use this route.

**2. Scope of Rehabilitation Works**

The cumulative length of the project is approximately 10,0 km of single carriageway road having an existing surfaced width of approximately 9,0 m. The carriageway road widths are to be formalised during construction to provide a uniform surfaced width of 10,0 m comprising two 3,5 m lanes and two 1,5 m surfaced shoulders. The new road profile will also require the construction of 1,0 m wide gravel shoulders on both sides, however the widening will not exceed 4 m in width and will be limited to the road reserve. The proposed rehabilitation comprises the earthworks, layerworks, surfacing, drainage, ancillary works and replacement of one culvert (28°43'29.79"S, 31°50'14.28"E), refer to Figure 1.

*Table 1: Description of the Culvert to be Replaced*

Existing Structure	Replacement Structure
<ul style="list-style-type: none"> <li>- 2x1500x1500 box culvert with a skew angle of 40 degrees.</li> <li>- The structure is cracked and has failed structural integrity inspections.</li> </ul>	<ul style="list-style-type: none"> <li>- 2x2400x2400 in situ concrete box culvert.</li> </ul>

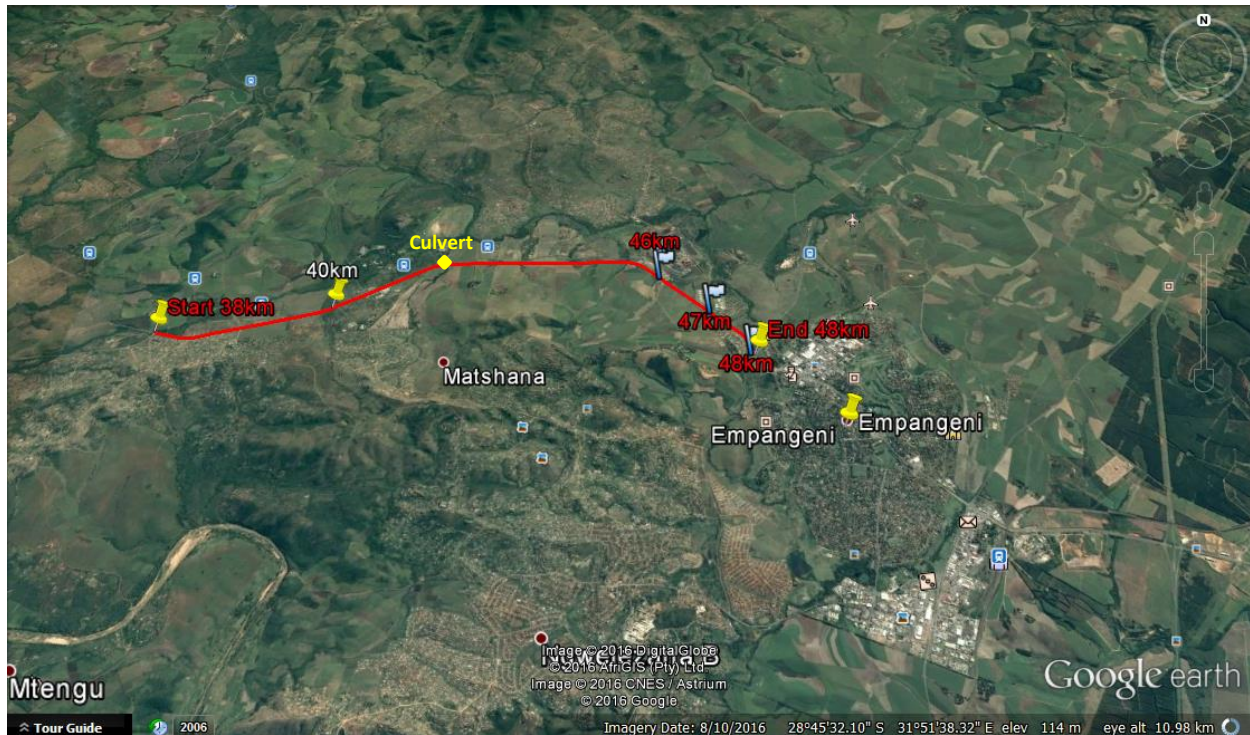


Figure 1: Location of the Proposed Rehabilitation of the P230 from km 37,0 (intersection with the P393) and km 47,0 (Empangeni)

### 3. Desktop Environmental Screening Investigation

A Desktop Environmental Screening Investigation (ESI) was conducted by Royal HaskoningDHV's Environmental team. The primary aim of this pre-application screening being to advise:

- Whether the proposal requires an environmental assessment and authorisation by a Competent Authority; and
- The level of the environmental assessment required.

The ESI involved the use of Geographic Information Systems (GIS) to map areas of sensitive geographical areas. Existing datasets by Ezemvelo KZN Wildlife (2016) and/or the South African National Biodiversity Institute (SANBI) were used to identify the following areas of sensitivity:

- Presence of watercourses along the proposed alignment, including estuarine functional zones;
- Community Conservation Areas;
- Biodiversity Stewardship Programme Biodiversity Agreement areas;
- Protected Areas;
- World Heritage Sites;
- Critical Biodiversity Areas (CBAs) or Ecological Support Areas (ESAs);
- Threatened Ecosystem Areas;
- Ecosystem Protection Levels; and
- Biodiversity Corridors.

### 3.1 Vegetation Type & Threat Status

As indicated in Figure 2, the majority of the road rehabilitation project falls within the historical extent of the Zululand Coastal Thornveld vegetation type, which is considered to be Critically Endangered due to the small extents thereof which remain.

This vegetation is associated with gently rolling landscapes supporting wooded grasslands dominated by Red grass (*Themeda triandra*) and with strong bush clump areas. As noted in Low & Rebelo (1996) the vegetation type is highly transformed, mostly by cultivation, sugar cane or communal lands. This is coupled with urban sprawl moving into these areas as at the eastern end of the road.

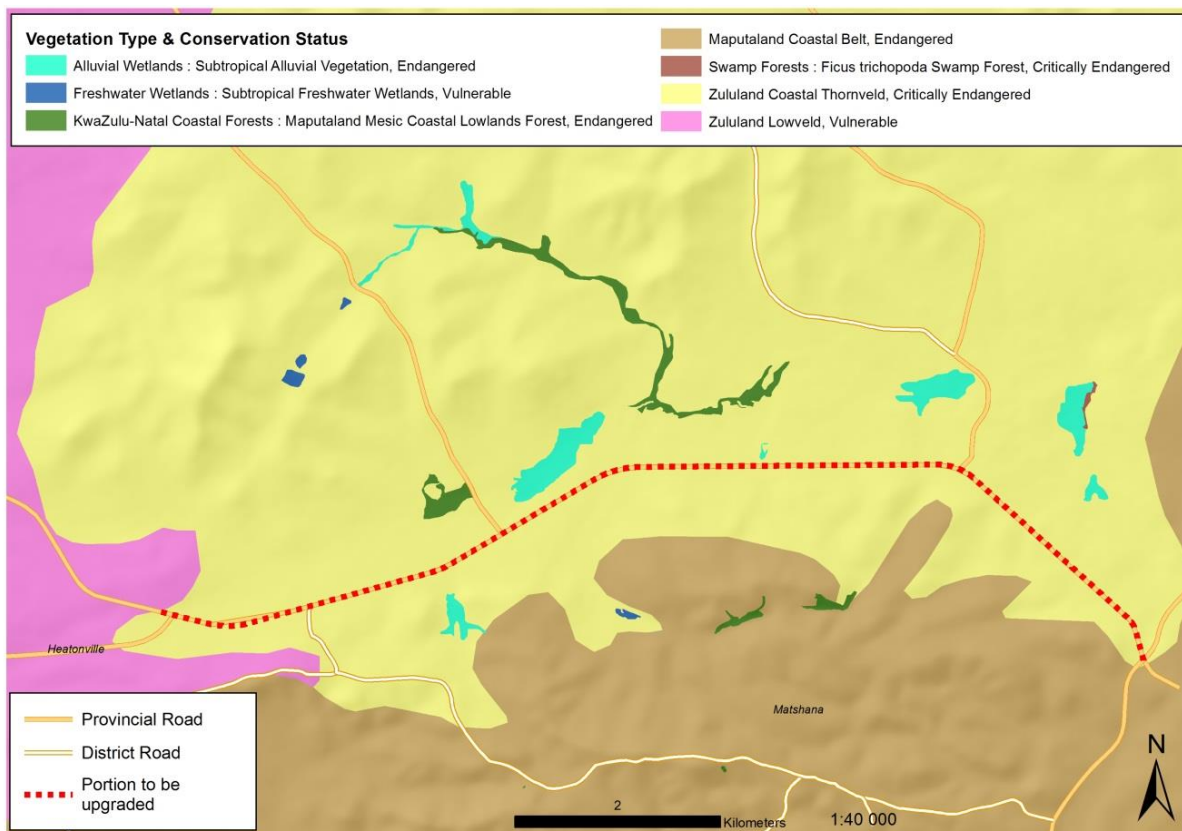


Figure 2: Historical Extent of Vegetation Type and Conservation Status (eZemvelo BGIS 2016)

### 3.2 Threatened Ecosystems & Areas of Conservation Importance

When considering the current vegetation extents, it is apparent that the level of modification of the vegetation is high (present and past). It is evident from Figure 3 that no threatened ecosystems occur near the road rehabilitation project. This is supported by the fact that the nearest area that is deemed of conservation importance (Figure 4), is in the form of a landscape corridor between two key areas of importance i.e. Ngoye and Fundimvelo Forest Reserves, and is more than 10 km to the west of the road rehabilitation project.



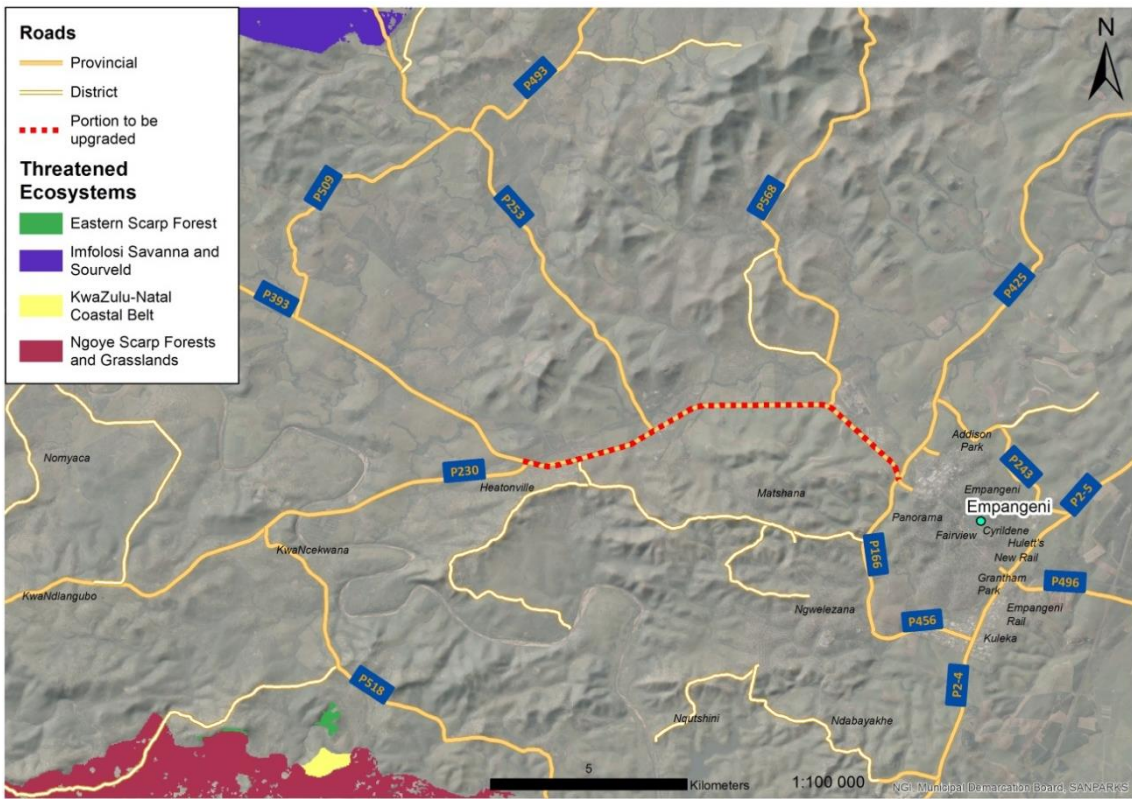


Figure 3: Threatened Ecosystem Status (eZemvelo BGIS 2016)

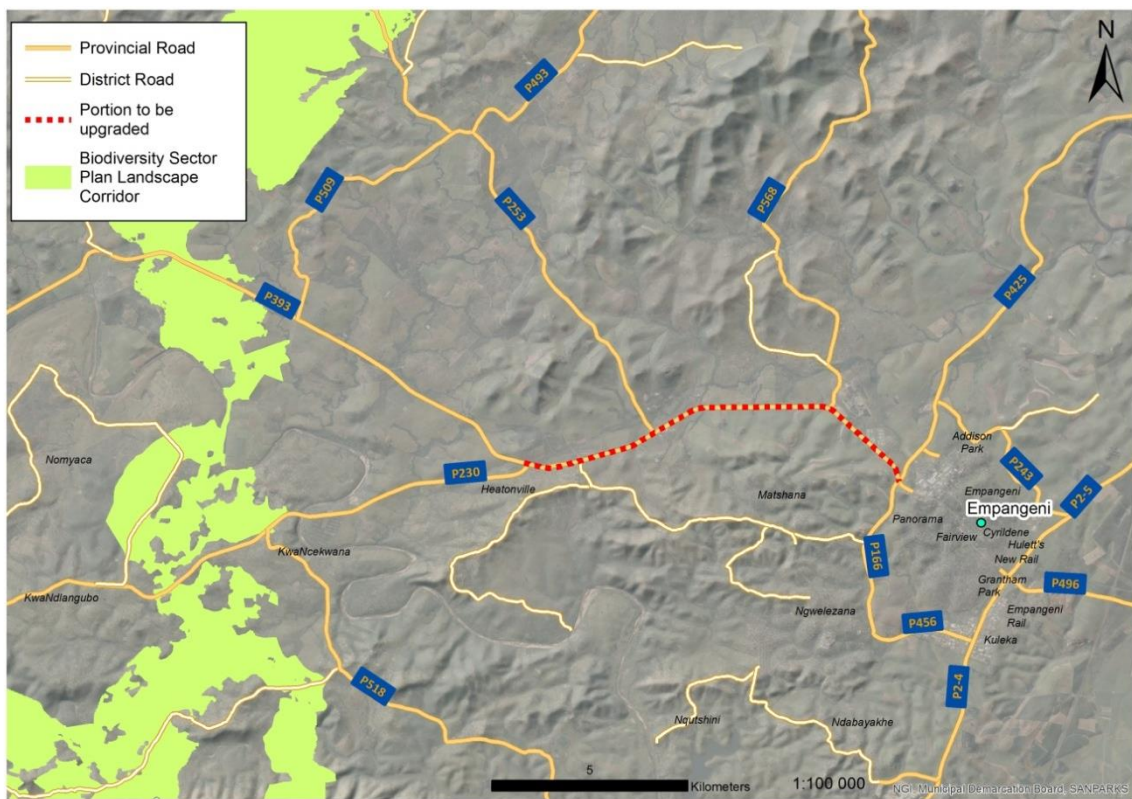


Figure 4: Biodiversity Sector Plan Areas of Significance (eZemvelo BGIS 2016)

### 3.3 Critical Biodiversity Areas (CBAs)

CBAs are areas deemed crucial to meet biodiversity targets for ecosystems, species and ecological processes in terms of systematic conservation planning. The nearest CBAs to the road in this respect are more than 2 km away from the road rehabilitation project, and in most cases, more than 5 km.

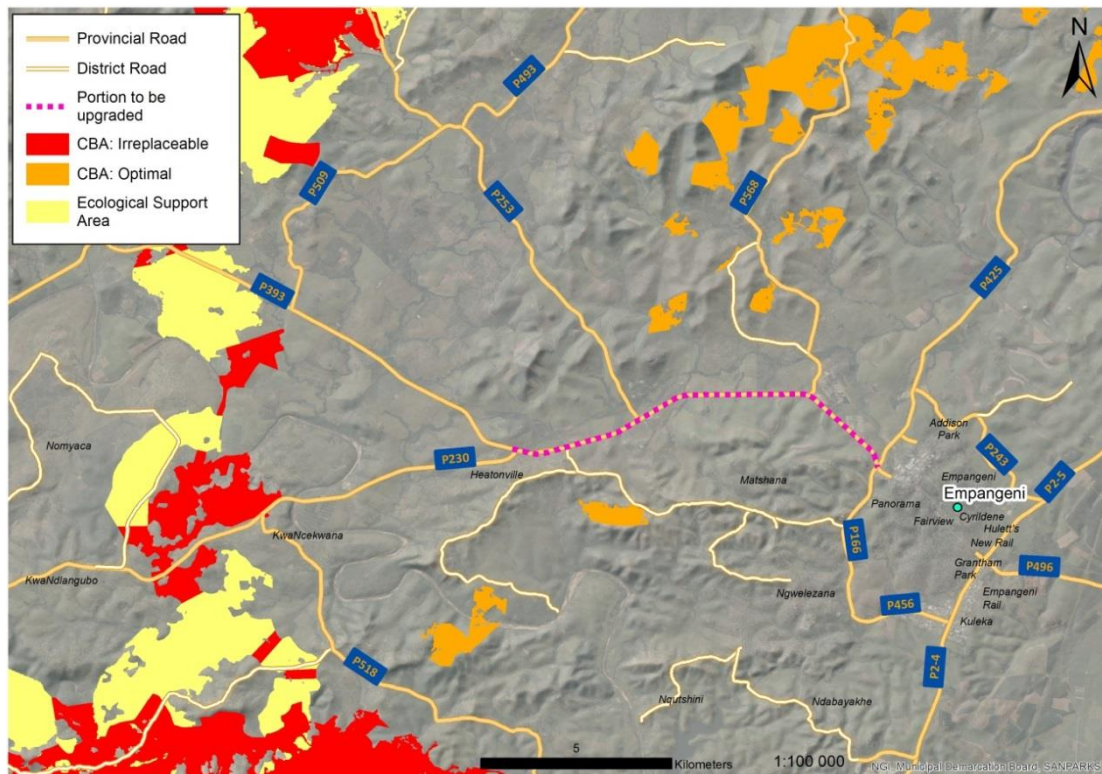


Figure 5: Critical Biodiversity Areas (eZemvelo BGIS 2016)

### 3.4 Watercourses

Four (4) watercourse units including three (3) wetlands and a single weakly seasonal river occurring within a 500 m radius of the culvert upgrade were mapped at a desktop level, shown in Figure 6 and as follows:

- i. Wetland Unit W01: channelled valley-bottom wetland (8.2 ha in extent)
- ii. Wetland Unit W02: wetland seep (0.8 ha in extent)
- iii. Wetland Unit W03: channelled valley-bottom wetland (4.7 ha in extent)
- iv. River Unit R01: Weakly Seasonal River

Two watercourses: Wetland Unit W01 and River Unit R01 will be impacted by the proposed development and/or triggering water use. These watercourses will be subject to further impact assessment and will be investigated further in terms of water use and the need for a full water licence application or whether a General Authorisation (GA) in terms of Section 21 c and/or i water use would be appropriate.

Wetland Unit W02 and W03 are either located in adjacent micro-catchments or some distance upstream of the zone of impact. No impacts resulting from the construction and operation of the culvert are likely to be incurred by these watercourses.



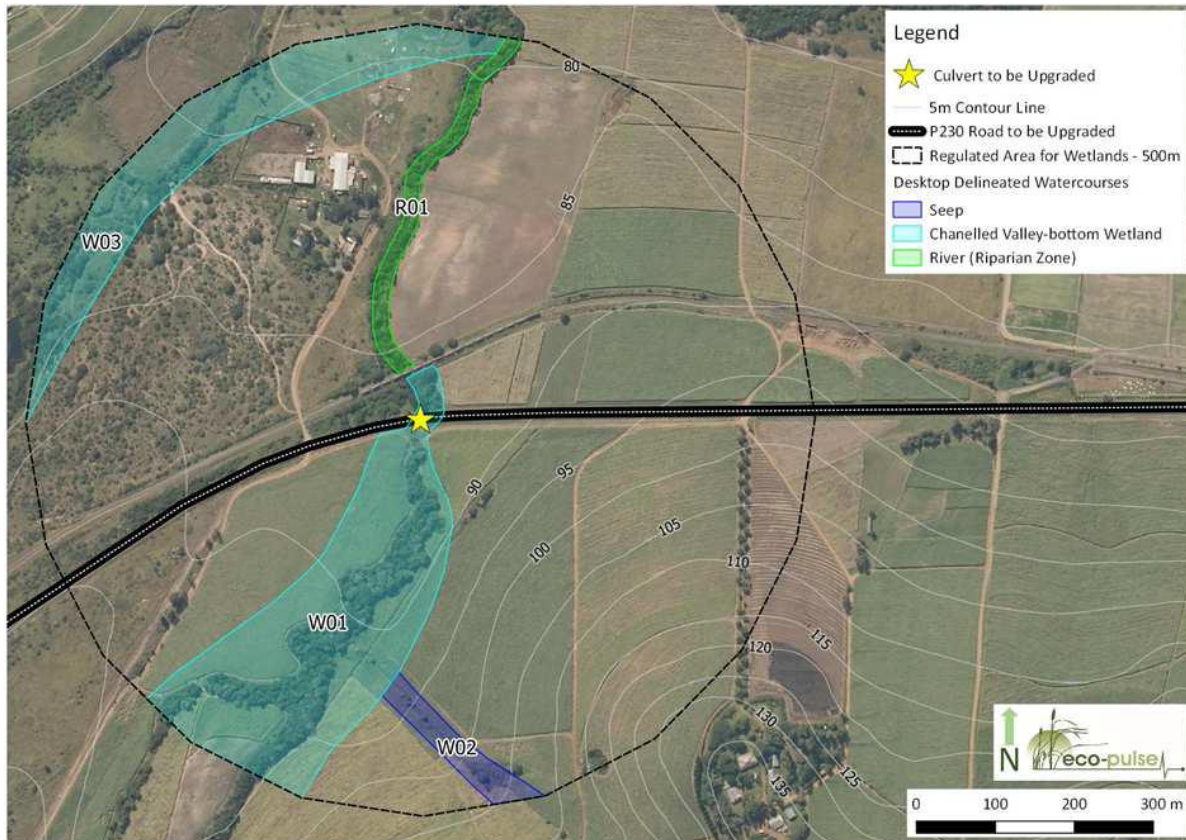


Figure 6: Desktop Delineation of Watercourses within the 500m Regulated Area for Wetlands

#### 4. EIA Requirements

A screening of the Environmental Impact Assessment (EIA) Regulations (2014) made under Section 24(5) of the National Environmental Management Act (No 107 of 1998) (as amended) are listed in Table 2 below. Any activities triggered in Government Notice R983 – 985 (i.e. Listing Notice 1, 2 and 3), would require an Environmental Authorisation (EA) prior to the commencement of the activity.

Table 2: Potential Activities Considered by the Proposed Rehabilitation

Activity No.	Applicability
GNR 983 (LN1) Activity 12	The replacement of the culvert involves the development of bulk stormwater outlet structures exceeding 100 m <sup>2</sup> in size within a watercourse as per Activity 12(vi)(a), however, such an activity occurs within an existing road or road reserve as per exclusion (ee). <b>Confirmation is requested from the Department that this Activity is not applicable.</b>
GNR 983 (LN1) Activity 19	The culvert structure involves the infilling or depositing or any material of more than 5 m <sup>3</sup> , or the dredging, excavation, removal or moving of soil, sand, shells, shell grit, pebbles, or rock of more than 5 m <sup>3</sup> from a watercourse.
GNR 983 (LN1) Activity 56	The existing road is 9,0 m wide and therefore, not wider than 13.5 m. Furthermore, the proposed widening is 1.0 m in extent and not greater than 6 m. <b>This Activity is not considered to be applicable.</b>
GNR 985 (LN3)	The extent of the P230 rehabilitation is not located within a sensitive geographical area as per Activity 14(d)i-x.

Activity No.	Applicability
Activity 14	<i>This Activity is not considered to be applicable.</i>

Based on the considerations provided in Table 2, it is assumed that a Basic Assessment (BA) will be required for the culvert construction.

## 5. Conclusion

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In conclusion, it is the professional opinion of Royal HaskoningDHV that:

- i. The replacement of the culvert (28°43'29.79"S, 31°50'14.28"E) should be subject to an Application for Environmental Authorisation and a BA study is undertaken.
- ii. The rehabilitation of the road can continue, noting that there are no listed activities triggered.

Confirmation of this interpretation is requested from the Competent Authority, i.e. the KwaZulu-Natal Department of Economic Development, Tourism and Environmental Affairs (KZN EDTEA).

Due to the degraded state of the existing road, the proposed rehabilitation work is required urgently. Consequently, the Department is requested to review this Interpretation Query and respond with a way forward.

Please feel free to contact the undersigned should you require any further clarity. We will avail ourselves to engage with your Department further to confirm the requirements outlined should it be requested.

Your assistance and timeous response is appreciated.

Yours faithfully  
for **Royal HaskoningDHV**



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