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Heritage survey report for

THE MARATHON-DELTA 132KV POWERLINE, MPUMALANGA

THE PROJECT:
Development of a 132kV power line.

THIS REPORT:
HERITAGE SURVEY REPORT FOR THE MARATHON-DELTA 132KV POWERLINE, MPUMALANGA

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EXECUTIVE SUMMARY

HERITAGE SURVEY REPORT FOR THE MARATHON-DELTA 132KV POWERLINE, MPUMALANGA

The aim of the survey was to locate, identify, evaluate and document sites, objects and structures of cultural significance found within the area in which it is proposed to develop an electricity transmission line. For this purpose three alternatives were chosen. All of them either follow an existing line or a road, i.e. areas where there already are impacts.

Current activities in the study area consist of agriculture and game ranching.

A variety of heritage resources occur in the larger geographical area, and according to current knowledge and understanding, it is unlikely that some might occur in all of the proposed corridors. Where there are features that threatened by the proposed development, it would be possible to apply mitigation measures, i.e. the archaeological investigation of the sites. The excavation of a site is in essence destructive and therefore the impact can be viewed as high and as permanent.

Based of on the survey, it seems as if Alternative 1 would be the best option, as in large part it would follow an existing line. Furthermore, previous work that was done in this area seems to point to the absence of heritage sites in this corridor. Alternative 3 would also be acceptable as it follows the existing road. Alternative 2 would be the least acceptable, from a heritage point of view as it crosses a section of which little is known.

Based on what was found and its evaluation, it is anticipated that the development can take place, on condition of acceptance of the management measures as set out in Section 7 of this report.

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GLOSSARY OF TERMS AND ABBREVIATIONS

STONE AGE	
Early Stone Age	2 000 000 - 150 000 Before Present
Middle Stone Age	150 000 - 30 000 BP
Late Stone Age	30 000 - until c. AD 200
IRON AGE	
Early Iron Age	AD 200 - AD 1000
Late Iron Age	AD 1000 - AD 1830

HISTORIC PERIOD

Since the arrival of the white settlers - c. AD 1840 in this part of the country

core - a piece of stone from which flakes were removed to be used or made into tools

ADRC	Archaeological Data Recording Centre
EIA	Early Iron Age
ESA	Early Stone Age
LIA	Late Iron Age
LSA	Late Stone Age
MSA	Middle Stone Age
NHRA	National Heritage Resources Act
PHRA	Provincial Heritage Resources Agency
SAHRA	South African Heritage Resources Agency

HERITAGE SURVEY REPORT FOR THE MARATHON-DELTA 132KV POWERLINE, MPUMALANGA

1. INTRODUCTION

An independent heritage consultant was appointed by Bohlweki Environmental to conduct a survey to locate, identify, evaluate and document sites, objects and structures of cultural importance found within the boundaries of an area in which it is proposed to develop a 132kV transmission line.

For this purpose, three alternative corridors were identified by ESKOM (Fig. 1). All of them either follow an existing line or a road, i.e. areas where there already are impacts.

The aim of the survey was to determine the nature and potential of cultural heritage resources found within the boundaries of the area that is to be impacted by the developed. Based on this, a selection is to be made on the most viable route in which the development can take place. This will largely be determined by:

- The significance of identified heritage sites – Grade I sites (see Appendix 2 below), are of national significance and should be avoided.
- The area where the least number of heritage sites will be impacted on.

2. TERMS OF REFERENCE

The scope of work consisted of conducting a Phase 1 archaeological survey of the site in accordance with the requirements of Section 38(3) of the National Heritage Resources Act (Act 25 of 1999).

This include:

- Conducting a desk-top investigation of the area
- A visit to the proposed development site

The objectives were to

- Identify possible archaeological, cultural and historic sites within the proposed development areas;
- Evaluate the potential impacts of construction, operation and maintenance of the proposed development on archaeological, cultural and historical resources;
- Recommend mitigation measures to ameliorate any negative impacts on areas of archaeological, cultural or historical importance.

3. DEFINITIONS AND ASSUMPTIONS

The following aspects have a direct bearing on the survey and the resulting report:

- *Cultural resources* are all non-physical and physical human-made occurrences, as well as natural occurrences that are associated with human activity. These include all

sites, structures and artefacts of importance, either individually or in groups, in the history, architecture and archaeology of human (cultural) development.

- The *significance* of the sites and artefacts are determined by means of their historical, social, aesthetic, technological and scientific value in relation to their uniqueness, condition of preservation and research potential. It must be kept in mind that the various aspects are not mutually exclusive, and that the evaluation of any site is done with reference to any number of these.

- Sites regarded as having low significance have already been recorded in full and require no further mitigation. Sites with medium to high significance require further mitigation.

- The latitude and longitude of archaeological sites are to be treated as sensitive information by the developer and should not be disclosed to members of the public.

4. STUDY APPROACH AND METHODOLOGY

4.1 Extent of the Study

This survey and impact assessment covers the area as presented in Section 5 and as illustrated in Figure 1.

4.2 Methodology

4.1 *Preliminary investigation*

4.1.1 Survey of the literature
A survey of the relevant literature was conducted with the aim of reviewing the previous research done and determining the potential of the area. In this regard, various anthropological, archaeological and historical sources were consulted - see the list of references below.

4.1.2 Data bases
The *Heritage Sites Database* and the *Environmental Potential Atlas* was consulted.

4.1.3 Other sources
Historical photographs and topocadastral and other maps were also studied - see the list of references below.

4.2 Field survey

The field survey was done according to generally accepted archaeological practices, and was aimed at locating all possible sites, objects and structures. The area that had to be investigated was identified by Bohlweki Environmental by means of maps. The area was investigated driving to accessible spots to investigate the areas where the corridors would be located. Special attention was given to topographical occurrences such as trenches, holes, outcrops and clusters of trees.

4.3 Documentation

All sites, objects and structures that are identified are documented according to the general minimum standards accepted by the archaeological profession. Coordinates of individual localities are determined by means of the *Global Positioning System* (GPS)[1] and plotted on a map. This information is added to the description in order to facilitate the identification of each locality.

Map datum used: Hartebeeshoek 94 (WGS84).

4.4 Limitations

- The vegetation growth was very dense during the site visit, seriously limiting archaeological visibility.

5. DESCRIPTION OF THE AFFECTED ENVIRONMENT

5.1 Site location

The location and extent of the study area can be determined from the map in Figure 1. It is located north of the city of Nelspruit and follows various routes southwards towards Nelspruit. It covers sections of the following farms: Marathon 275JT and Boschrand 233JT. It centers around the following coordinates: S 25.40557, E 30.95722.

Topographically, the area can be described as low mountains, with a number of smaller rivers running through it. The geology is made up of granite and the original vegetation is classified as Sour Lowveld Bushveld. Currently, large sections of the area are used for farming of deciduous fruit.

5.1 Description of affected environment

5.1.1 *Stone Age*

Although no stone tools and flakes were noticed during the site visit, a more detailed search would undoubtedly reveal some. Some shelters containing rock art are known to occur on the farms Marathon and Dingwell. Because of its topography, the changes of more rock shelters that could have been inhabited in the past and with rock art, is highly likely.

5.1.2 *Iron Age*

Although no Iron Age sites were identified during the site visit, the chances of them occurring is likely. It is expected that they would conform to the types described by Evers (1977) in the Plaston Area, and those described by Meyer (1986), who undertook a detailed survey of Iron Age sites in the Kruger National Park.

5.1.3 *Historic period*

The historic period started in the 1840s. Due to the presence of malaria, few people settled here and most, being traders, hunter and miners, only passed through the area. Nelspruit as

[1] According to the manufacturer a certain deviation may be expected for each reading. Care was, however, taken to obtain as accurate a reading as possible, and then to correlate it with reference to the physical environment before plotting it on the map.

town was proclaimed only in 1905. As time went by, the area was divided into farms and more and more people settled on a permanent basis.

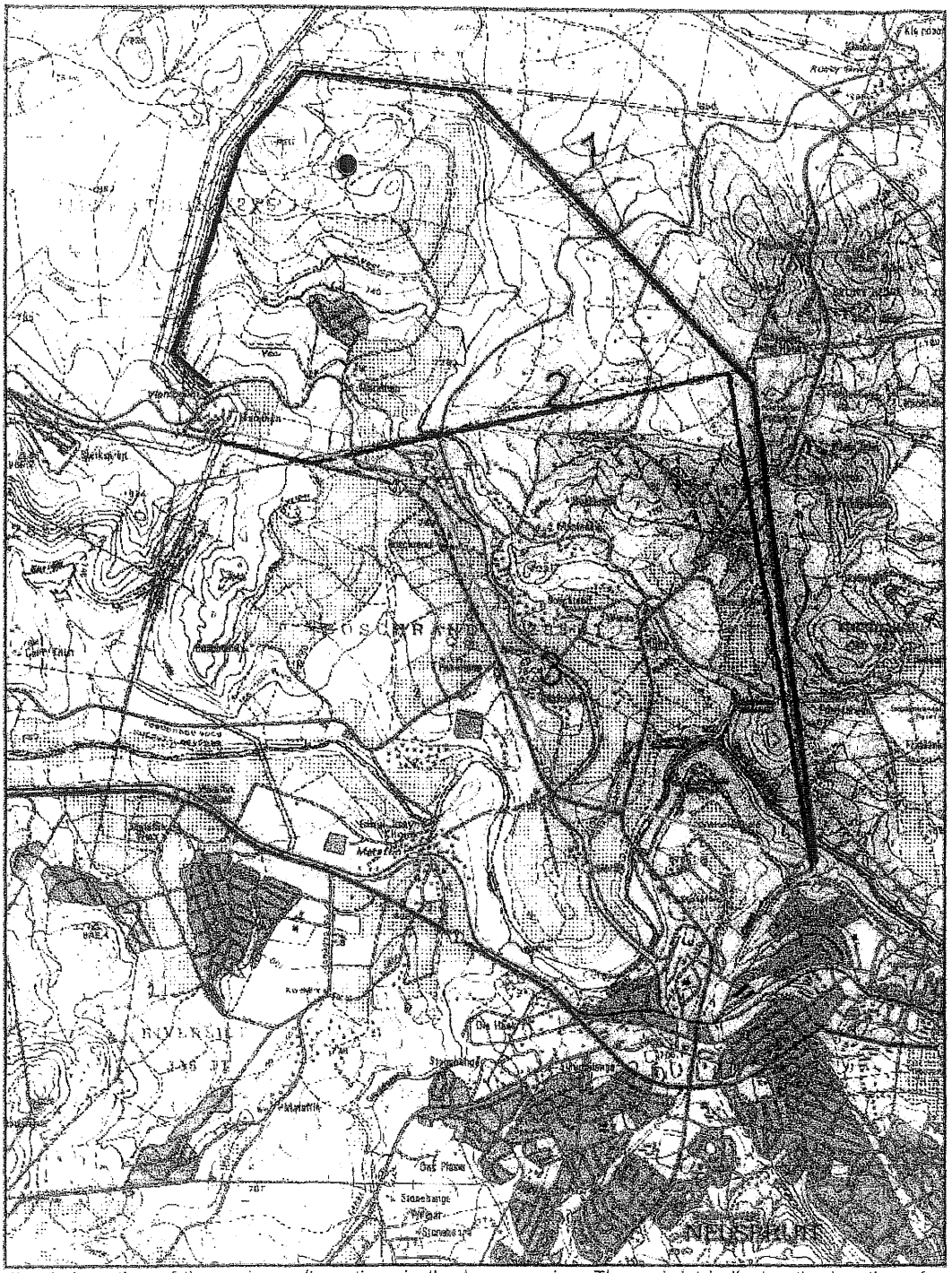

Fig. 1. Location of the various alternatives in the larger region. The red dot indicates the location of a known heritage site (Map 2530BD. Government Printer, Pretoria).

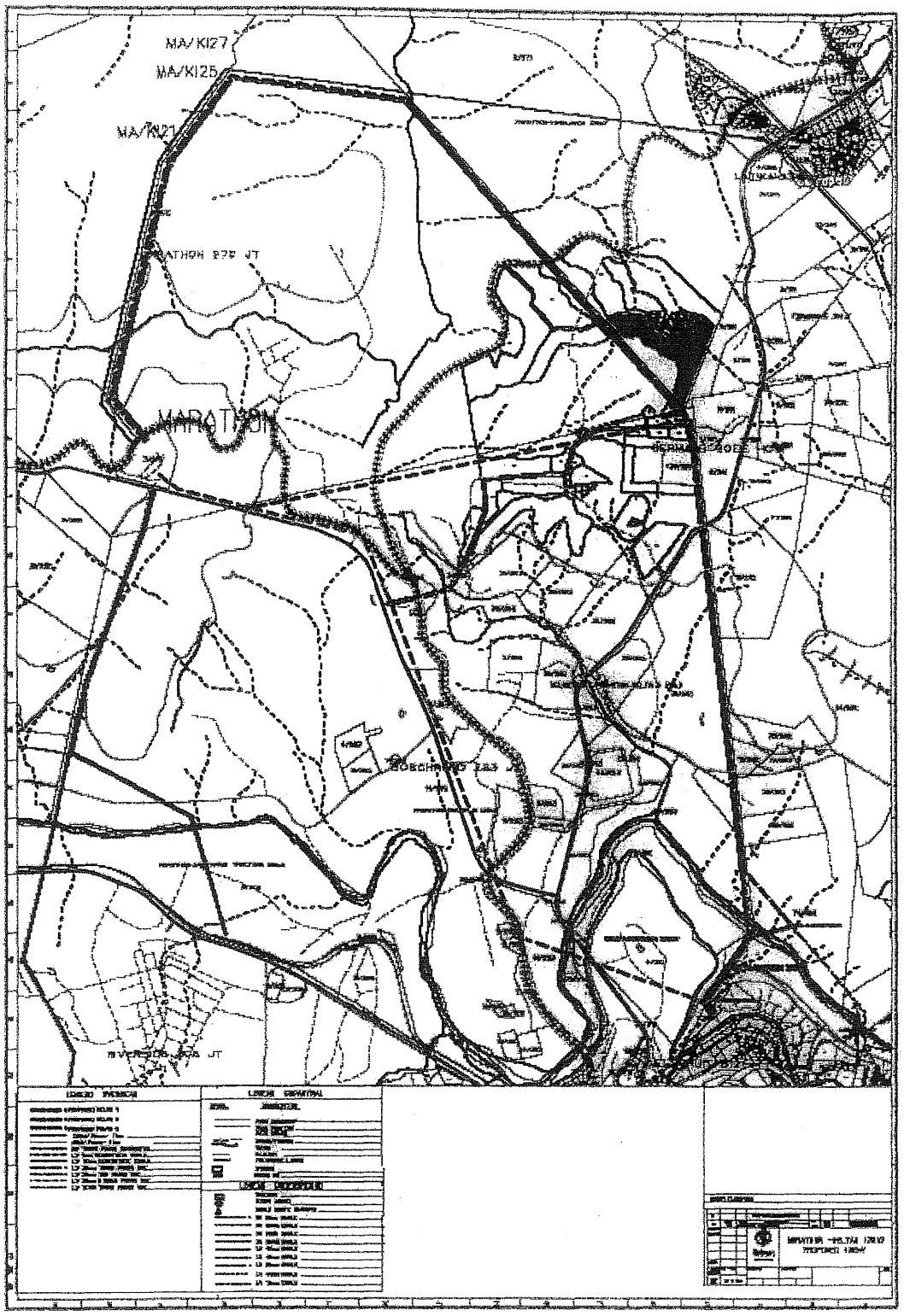

Fig. 2. Location of the study area showing the different corridors.

6. IDENTIFICATION OF RISK SOURCES

An Heritage Impact Assessment is focused on two phases of a proposed development: **the construction** and **operation phases**. However, from a cultural heritage perspective, this distinction does not apply. Heritage sites are fixed features in the environment, occurring within specific spatial confines. Any impact upon them is permanent and non-reversible. Those resources that cannot be avoided and that are directly impacted by the development can be excavated/recorded and a management plan can be developed for future action. Those sites that are not impacted, can be written into the management plan, whence they can be avoided or cared for in the future.

The following project actions may impact negatively on archaeological sites and other features of cultural importance. The actions are most likely to occur during the construction phase of a project.

Construction phase:

Possible Risks	**Source of the risk**
Actually identified risks	
- damage to sites	Construction work
Anticipated risks	
- looting of sites	Curious workers

Operation phase:

Possible Risks	**Source of the risk**
Actually identified risks	
- damage to sites	Not keeping to management plans
Anticipated risks	
- damage to sites - looting of sites	Unscheduled construction/developments Visitors removing objects as keepsakes

7. RECOMMENDED MANAGEMENT MEASURES

Heritage sites are fixed features in the environment, occurring within specific spatial confines. Any impact upon them is permanent and non-reversible. Those resources that cannot be avoided and that are directly impacted by the development can be excavated/recorded and a management plan can be developed for future action. Those sites that are not impacted on, can be written into the management plan, whence they can be avoided or cared for in the future.

7.1 Objectives

Protection of archaeological, historical and any other site or land considered being of cultural value within the project boundary against vandalism, destruction and theft.

The preservation and appropriate management of new discoveries in accordance with the National Heritage Resources Act (Act No. 25 of 1999), should these be discovered during construction.

7.2.1 *Construction phase*

General management objectives and commitments:

- To avoid disturbing sites of heritage importance; and
- To avoid disturbing burial sites.

The following shall apply:

- The contractors and workers should be notified that archaeological sites might be exposed during the construction work.
- Should any heritage artefacts be exposed during excavation, work on the area where the artefacts were discovered, shall cease immediately and the Environmental Control Officer shall be notified as soon as possible;
- All discoveries shall be reported immediately to a museum, preferably one at which an archaeologist is available, so that an investigation and evaluation of the finds can be made. Acting upon advice from these specialists, the Environmental Control Officer will advise the necessary actions to be taken;
- Under no circumstances shall any artefacts be removed, destroyed or interfered with by anyone on the site; and
- Contractors and workers shall be advised of the penalties associated with the unlawful removal of cultural, historical, archaeological or palaeontological artefacts, as set out in the National Heritage Resources Act (Act No. 25 of 1999), Section 51. (1).

7.2.2 *Operation phase*

General management objectives and commitments:

- To avoid disturbing sites of heritage importance.

The following shall apply:

- Continued care should be taken to observe discovery of any sites of heritage significance during operation. Should any archaeological artifacts and palaeontological remains be exposed during operations, work on the area where the artefacts were found, shall cease immediately and the appropriate person shall be notified as soon as possible;
- Upon receipt of such notification, an Archaeologist or Palaeontologist shall investigate the site as soon as practicable. Acting upon advice from these specialists, the necessary actions shall be taken;
- Under no circumstances shall archaeological or palaeontological artefacts be removed, destroyed or interfered with by anyone on the site during operations; and
- The powerline operator shall advise its workers of the penalties associated with the unlawful removal of cultural, historical, archaeological or palaeontological artefacts, as set out in the National Heritage Resources Act (Act No. 25 of 1999), Section 51(1).

7.2.3 *Impact minimization*

Impact analysis and resultant management of cultural resources under threat of the proposed development, are based on the present understanding of the construction and operation of a transmission line. The following objectives and design standards, if adhered to, can eliminate, minimize or enhance potential impacts.

The preservation and appropriate management of new discoveries in accordance with the National Heritage Resources Act (Act No. 25 of 1999), should these be discovered during construction.

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- The developer must ensure that an archaeologist inspects each site selected for the erection of a pole structure. If a particular pole structure impacts on a heritage site but cannot be shifted, mitigation measures, i.e. the controlled excavation of the site prior to development, can be implemented. This can only be done by a qualified archaeologist after obtaining a valid permit from SAHRA.

- The same action holds true for any infrastructure development such as access routes, construction campsites, etc.

- In the past, people used to settle near water sources. Therefore riverbanks, rims of pans and smaller watercourses should be avoided as far as possible.

- In this particular part of the country, Iron Age people also preferred to settle on the saddle (or neck) between mountains (hills/outcrops). These areas should also be avoided.

- Avoid all patches bare of vegetation unless previously inspected by an archaeologist. These might be old settlement sites.

- Rock outcrops might contain rock shelters, engravings or stone walled settlements, and should therefore be avoided unless previously inspected by an archaeologist.

- Communities living close to the proposed corridor should be consulted as to the existence of sites of cultural significance, e.g. graves, as well as sites that do not show any structures but have emotional significance, such as battlefields, etc.

- All graves or cemeteries should be avoided, unless when totally impossible. The correct procedure, i.e. notification of intent to relocate them, consultation with descendants and permit application, should then be followed in relocating the graves. If any of the graves are older than 60 years, they can only be exhumed by an archaeologist. Graves of victims of conflict requires additional permits from SAHRA before they can be relocated.

- Archaeological material, by its very nature, occurs below ground. The developer should therefore keep in mind that archaeological sites might be exposed during the construction work. If anything is noticed, work in that area should be stopped and the occurrence should immediately be reported to a museum, preferably one at which an archaeologist is available. The archaeologist should then investigate and evaluate the find.

- Any mitigation measures applied by an archaeologist, in the sense of excavation and documentation, should be published in order to bring this information into the public domain.

9. REFERENCES

9.1 **Data bases**

Heritage Sites Database, Pretoria.

Environmental Potential Atlas, Department of Environmental Affairs and Tourism.

Central State Archive, Pretoria (Photographs)

9.2 **Literature**

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Van Warmelo, N.J. 1977. *Anthropology of Southern Africa in Periodicals to 1950.* Pretoria: Government Printer.

9.3 **Maps**

1: 50 000 Topocadastral maps – 2530BD

APPENDIX 1: CONVENTIONS USED TO ASSESS THE IMPACT OF PROJECTS ON HERITAGE RESOURCES

Significance

The *significance* of the sites and artefacts are determined by means of their historical, social, aesthetic, technological and scientific value in relation to their uniqueness, condition of preservation and research potential. It must be kept in mind that the various aspects are not mutually exclusive, and that the evaluation of any site is done with reference to any number of these.

Matrix used for assessing the significance of each identified site/feature

1. Historic value			
Is it important in the community, or pattern of history			
Does it have strong or special association with the life or work of a person, group or organisation of importance in history			
Does it have significance relating to the history of slavery			
2. Aesthetic value			
It is important in exhibiting particular aesthetic characteristics valued by a community or cultural group			
3. Scientific value			
Does it have potential to yield information that will contribute to an understanding of natural or cultural heritage			
Is it important in demonstrating a high degree of creative or technical achievement at a particular period			
4. Social value			
Does it have strong or special association with a particular community or cultural group for social, cultural or spiritual reasons			
5. Rarity			
Does it possess uncommon, rare or endangered aspects of natural or cultural heritage			
6. Representivity			
Is it important in demonstrating the principal characteristics of a particular class of natural or cultural places or objects			
Importance in demonstrating the principal characteristics of a range of landscapes or environments, the attributes of which identify it as being characteristic of its class			
Importance in demonstrating the principal characteristics of human activities (including way of life, philosophy, custom, process, land-use, function, design or technique) in the environment of the nation, province, region or locality.			
7. Sphere of Significance	High	Medium	Low
International			
National			
Provincial			
Regional			
Local			
Specific community			
8. Significance rating of feature			
1. Low			
2. Medium			
3. High			

6.1.3. Heritage

Based of on the survey, it seems as if Corridor 1 would be the best option, as in large part it would follow an existing line. Furthermore, previous work that was done in this area seems to point to the absence of heritage sites in this corridor. Corridor 3 would also be acceptable as it follows the existing road. Corridor 2 would be the least acceptable, from a heritage point of view as it crosses a section of which little is known.

Based on what was found and its evaluation, it is anticipated that the development can take place, on condition of acceptance of the management measures.

6.3. Summary of Impact Analysis

Table 6.1. Gives a summary of the impact analysis result from this study.