HERITAGE IMPACT SCOPING REPORT FOR THE PLANNED HENDRINA-MARATHON POWERLINE, MPUMALANGA PROVINCE

Prepared by:

J A VAN SCHALKWYK

NATIONAL CULTURAL HISTORY MUSEUM

P.O. Box 28088

Sunnyside

0132

Prepared for:

Mr R Heydenrych

STRATEGIC ENVIRONMENTAL FOCUS

P O Box 74785

LYNNWOOD RIDGE

Gauteng

0040

September 2007

EXECUTIVE SUMMARY

HERITAGE IMPACT SCOPING REPORT FOR THE PLANNED HENDRINA-MARATHON POWERLINE, MPUMALANGA PROVINCE

The aim of the survey was to evaluate the heritage potential of an area through which it is proposed to construct a new electricity powerline. For this purpose, three alternative corridors were identified, all of which were reviewed as to their impact on heritage resources. The study was negatively influenced by a number of factors:

- Very little information exists on the area.
- Access to areas was not always possible.
- The uncertainty of the exact location of the identified corridors.

Despite this, it could be determined that a variety of cultural heritage sites occur in the area. These range from settlements to initiation sites, industrial and farming related sites as well as cemeteries. It is predicted that many more would be identified if a detailed survey is undertaken. Therefore, from a heritage point of view, it is anticipated that all of the identified corridors would, at least for shorter sections, have an impact on heritage sites. Selection of the preferred corridor is based on the criteria of the absence of Grade I sites as well as the least number of sites that would be impacted on. In this case, the northern corridor would definitely be the preferred route. On the other hand, existing impacts on sites in the central and southern corridors might make that an option, if the developer is willing to undertake large-scale mitigation measures, such as a detailed survey and excavation of selected sites which have already been impacted.

Based on the above, it is anticipated that if the development takes place, it would be on condition of acceptance of the management measures as set out in Section 7 of this report. The most important of this would be the conducting of a full Phase 1 archaeological survey of the selected corridor in accordance with the requirements of Section 38(3) of the National Heritage Resources Act (Act 25 of 1999).

With reference to the two alternatives selected for each of the substations, the Marathon sites would, based on current information, not present any problems. In contrast, the Prairie substation alternatives occur in the area where some heavy fighting took place during the Anglo-Boer War and as a result there might be some emotional significance attached to the area. Therefore, it is recommended that these alternatives are investigated on ground level to determine if they would have an impact on the potential significance of the site.

In the case where resources do occur, assessment of the potential impact of the development can only be done once a final corridor has been selected and tower positions determined. Mitigation of heritage sites implies first of all total avoidance, or, secondly, the recovery of sufficient data from the site in order that it can be studied and understood at a later stage. This latter scenario is not necessarily negative as science stands to benefit from such actions.

TABLE OF CONTENTS

Page

GLOSSARY OF TERMS

Study area: Refers to the entire study area as indicated by the client in the accompanying Fig. 1.

Stone Age: The first and longest part of human history is the Stone Age, which began with the appearance of early humans between 3-2 million years ago. Stone Age people were hunters, gatherers and scavengers who did not live in permanently settled communities. Their stone tools preserve well and are found in most places in South Africa and elsewhere.

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: Period covering the last 1800 years, when new people brought a new way of life to southern Africa. They established settled villages, cultivated domestic crops such as sorghum, millet and beans, and they herded cattle as well as sheep and goats. These people, according to archaeological evidence, spoke early variations of the Bantu Language. Because they produced their own iron tools, archaeologists call this the Iron Age.

Early Iron Age	AD 200 - AD 1000
Late Iron Age	AD 1000 - AD 1830

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

LIST OF ABBREVIATIONS

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 IMPACT SCOPING REPORT FOR THE PLANNED HENDRINA-MARATHON POWERLINE, MPUMALANGA PROVINCE

1. INTRODUCTION

The National Cultural History Museum[1] was contracted by **Strategic Environmental Focus** to review an area in which it is proposed to develop a new 400 kV powerline. For this purpose, two alternative corridors were identified by ESKOM, with a number of shorter possible deviations. For each of the substations that are to be developed, i.e. Prairie and Marathon, two alternative sites are proposed. 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 Section 5 below), are of national significance and should be avoided.
- The area where the least number of heritage sites will be impacted on.

Cultural heritage resources are broadly defined as 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.

2. BACKGROUND AND BRIEF

The scope of work consisted of reviewing an area, in accordance with the requirements of Section 38(3) of the National Heritage Resources Act (Act 25 of 1999), to determine the potential of heritage resources that might occur in the area.

This include:

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

The objectives were to

[1] The National Cultural History Museum is affiliated to the Northern Flagship Institution, which act as parent body for a number of museums, all of which resorts under the Department of Arts and Culture.

- 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;
- Indicated which would be the preferred site for the proposed development;
- Recommend mitigation measures to ameliorate any negative impacts on areas of archaeological, cultural or historical importance.

3. STUDY APPROACH

3.1 **Methodology**

3.1.1 *Preliminary investigation*

3.1.1.1 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 reports, anthropological, archaeological and historical sources were consulted - see the list of references below.

3.1.1.2 Data bases

The *Heritage Sites Database* and the *Environmental Potential Atlas* was consulted. The databases contained in the National Archives were also consulted.

3.1.1.3 Other sources

Topocadastral and other maps were studied - see the list of references below. Aerial photographs, where available, were used. These greatly assisted in the detection of Iron Age stone walled sites (Fig. 1).

3.2.1 *Field survey*

The area was divided into blocks by using natural (e.g. streams) as well as manmade (e.g. roads, fences) boundaries, and each block was surveyed by driving across it in a number of transects. Fences and rivers obviously necessitated a deviation from this strategy. The area was also access by means of a helicopter, which was used to fly over the various corridors.

3.3.1 *Documentation*

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)[2] 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).

Fig. 1. Aerial photograph showing a number of Late Iron Age stone walled sites in the area (Photo, courtesy of Google).

3.4 **Limitations**

The following played an important role in determining the potential in the area:

- Almost nothing is known of the Schoemanskloof area as very little previous research have been done here.
- Dense vegetation encountered during the survey period, made it difficult to identify sites, as well as to establish their extent (size) (Fig. 2).
- Not all areas are accessible, for example game ranches and some farms.
- Sufficient oral traditions are not available for the rural areas to have insight into the existence of possible heritage sites.

[2] 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.

Fig. 2. Circular structure of stone, with a smaller, inner circle (identified by the black and white metre stick) in the background.

4. STUDY AREA

4.1 **Location of the study area**

The location and extent of the study area can be determined from the map in Figure 3. It stretches from the Hendrina Krag powerstation in the southwest all the way northeast towards Nelspruit.

On the basis of its topography, three distinct areas can be identified.

The western section of the study area is located on the interior plateau, which is characterised by gently rolling hills, with a few large rivers bisecting it. This area is largely subjected to agricultural and mining activities. As such, these are destructive activities and would have had a negative impact on any heritage resources that might have occurred here in the past. Fortunately, the area was not densely populated in the past and it was only with its occupation by white farmer settlers during the

past 150 years that the area was opened up. Mining activities followed soon after that, especially with the development of the Witwatersrand goldfields and its requirement of coal as source of fuel.

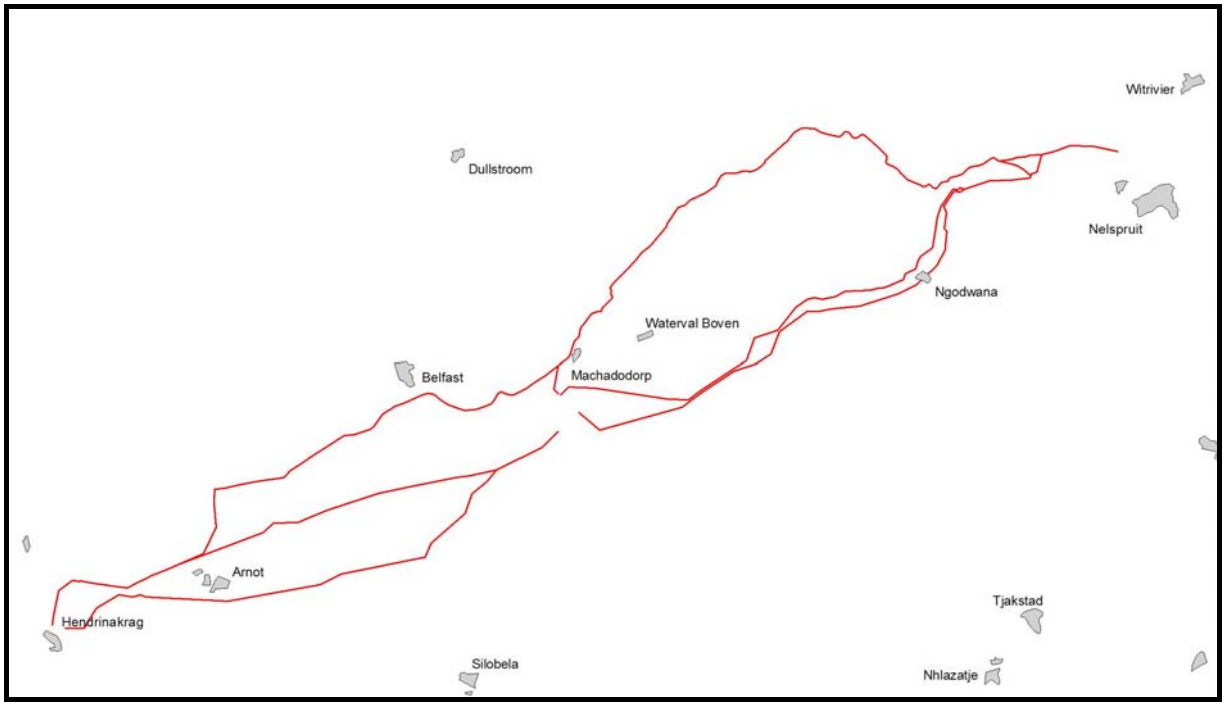

Fig. 3. Location of the study area (the corridors are indicated in red) in regional context.

In contrast, the escarpment area is characterised by high mountains, with steep valleys. Large sections of this area have been subjected to forestry activities, which also would have had a negative impact on heritage sites.

The lowveld area, being hot, humid and prone to malaria and other illnesses, was, depending on climatic fluctuations, avoided for long periods of time. It was only recently that it became densely populated and now has been extensively subjected to farming and forestry activities, which also would have had a negative influence on heritage resources.

4.2 **Description of affected environment**

4.2.1 *Stone Age*

Occupation of the larger geographical region took place since at least Early Stone Age times. Tools dating to this and the later Middle Stone Age period are commonly found in the proximity of most

rivers, outcrops and such. However, as these are surface finds, they are generally viewed to have a low significance.

It was only during the Late Stone Age, that people started to occupy sites on a recurring basis. These are rock shelters and caves, occurring in suitable geological environments, e.g. in the broken environment of the escarpment. Very few such sites are known to occur in the study area, although no detailed survey has ever been done here. For the first time we now get evidence of people's activities derived from material other than stone tools. Ostrich eggshell beads, ground bone arrowheads, small bored stones and wood fragments with incised markings are traditionally linked with the LSA. They were also well known for giving expression to their complex religious beliefs in rock art, which can be found in any number of sites in the area.

4.2.2 *Iron Age*

Iron Age people started to settle in southern Africa c. AD 300, with one of the oldest known sites east of Tzaneen at Silver Leaves. By AD 800 people were occupying a number of village in the Limpopo River valley and, with the East Coast trade, populations rapidly expanded. This resulted in the development of kingdoms that ruled over large tracts of land. However, drought and changes in the trade patterns, forced these people by AD 1250 to abandon these areas, some moving north, other south.

The occupation of the larger geographical area (including the study area) started at least during the first millennium AD, for example in the White River and Lydenburg areas. However, it was only after the beginning of the 16th century that large-scale occupation of the area started to take place. By the 16th century things changed, with the climate becoming warmer and wetter, creating condition that allowed Late Iron Age (LIA) farmers to occupy areas previously unsuitable. Population movements, competition for resources, etc. created tensions amongst different groups and people were forced to congregate into large towns for defensive purposes.

Due to their specific settlement requirements, Late Iron Age people preferred to settle on the steep slope of a mountain, possibly for protection, or for cultural considerations such as grazing for their enormous cattle herds.

A number of stone-walled archaeological sites, which are dated to the Late Iron Age (c. AD 1640 - AD 1830s), were identified. These sites are conventionally associated with Nguni-speaking people, although a second viewpoint is that it was built by Sotho-speakers. The alternative interpretation of a specific individual that these sites are of Hindu origin, is discounted here.

Various researchers (Evers 1975, Marker & Evers 1976, Mason 1968 and Collet 1982) have attempted a classification of the stone walled sites on the Mpumalanga escarpment area. Of these, the

work of Mason was the most extensive. However, he only focussed on homestead areas. By using site layout, he identified eight ruin classes. Collet (1982) subdivided the settlement units as:

- Simple ruins which consist of an isolated circular enclosure, and
- Complex ruins which consist of two or more contiguous circular or semi-circular enclosures.

Evers (1975) and Marker & Evers (1976) also considered other elements such as agricultural activities (terracing) and pathways (cattle track) as system of communication between settlements. According to Marker & Evers (1976:160) the combination between the three attributes forms a settlement.

Fig. 4. Typical stone walling on a site similar to those under discussion.

4.2.3 *Historic period*

Whites moved into the area during the first half of the 19th century, first as hunters, traders and missionaries, with settlers (farmers) following closely on their heels. Most of the towns were

established during the last decade or two of the nineteenth century, most as a result of the development of the railway line to the east. During the 18880s, the Pretoria – Lorenço-Marques railway line, also known as the NZASM line, was built through the area. A number of features, e.g. bridges, culverts, stations, good sheds, etc. still exist. During the 1920s the old national road (now the N4) was built. Some of the bridges and culverts that formed part of this road still exist. Some battle sites, dating to the Anglo-Boer War occur all over, most clustering around the main railway line. This include a number of cemeteries containing the remains of soldiers who died in action.

Of great significance is the area variously known as Berg-en-Dal or Dalmanutha. Over the period of 21-27 Auguat 1900, one of the last set battles of the Anglo-Boer War was fought here. Although Gen. Botha's forces were spread out over a front line of 50 miles, most of the battles took place on these two farms (Kruger 1974). The burgers were entrenched in a number of skanses and trenches, some of which are apparently still visible. After heavy fighting lasting several day, the burger lines were broken by Gen. Buller (acting against the battle plans developed by Lord Roberts), and the burgers had to retreat.

Fig. 5. A contemporary photograph, showing the construction of one of the bridges during the building of the railway line in the 1880s. It is interesting to know that in some cases, stone for the use in building of these culverts were imported from Belgium and The Netherlands. (Photo: NCHM)

- Other sites also occur in the study area are
    - Farming related structures such as farmsteads.
    - A large number of informal cemeteries occur all over.

Fig. 6. One of the stone culverts shortly after completion (Photo: NCHM). Many such culverts still occur in the study area as part of the current railway line.

5. SITE SIGNIFICANCE AND ASSESSMENT

Impact analysis of cultural resources under threat of the proposed development, are based on the present understanding of the development.

The **significance** of a heritage site and artefacts is determined by it historical, social, aesthetic, technological and scientific value in relation to the 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 are viewed as been recorded in full after identification and would require no further mitigation. Impact from the development would therefore be judged to be low. Sites with a medium to high significance would therefore require mitigation. Mitigation, in most cases the excavation of a site, is in essence destructive and therefore the impact can be viewed as high and as permanent.

The National Heritage Resources Act (Act no 25 of 1999) stipulates the assessment criteria and grading of archaeological sites. The following categories are distinguished in Section 7 of the Act:

- **Grade I**: Heritage resources with qualities so exceptional that they are of special national significance;
- **Grade II**: Heritage resources which, although forming part of the national estate, can be considered to have special qualities which make them significant within the context of a province or a region; and
- **Grade III**: Other heritage resources worthy of conservation, and which prescribes heritage resources assessment criteria, consistent with the criteria set out in section 3(3), which must be used by a heritage resources authority or a local authority to assess the intrinsic, comparative and contextual significance of a heritage resource and the relative benefits and costs of its protection, so that the appropriate level of grading of the resource and the consequent responsibility for its management may be allocated in terms of section 8.

Based on current knowledge and understanding of the area, one can evaluate the heritage sites in the area as follows:

- Stone tools dating from all periods of the Stone Age are known to occur all over the study area. As these objects are open finds and not in their original position anymore, they are viewed as having a low significance. A few ‘sealed’ sites, i.e. in a cave or rock shelter are known in the area, some of them containing rock art.

All the known Stone Age sites in the study area are currently viewed as being of Grade III significance.

- Almost all known Iron Age settlements occur on the steep slopes of the escarpment area and are characterised by intricate stone walling. It is difficult to estimate the exact number of such sites, but it probably would run into thousands. Unfortunately, these sites are little understood at present, and chronological, spatial and cultural differences are unclear.

All the Iron Age sites currently known in the area are viewed to be of Grade III significance.

- Sites dating to the historic period can be related to early farming, infrastructure development, mining and missionary activities. Included with these are also a number of sites of “ethno-

historical" significance, such as the tribal capitals of the different groups of Sotho- and Ndebele- and Swazi-speakers living in the area.

All the site dating to historic times currently known in the area are viewed to be of Grade III significance. The exception would be cemeteries dating to the Anglo-Boer War as well as features relating to the main railway line. These are all viewed to be of Grade II significance.

6. IDENTIFICATION OF RISK RESOURCES

An Environmental 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.

Construction phase:

Possible Risks	**Source of the risk**
Actually identified risks	
- damage to sites	Construction work
Anticipated risks	
- looting of sites	Curios 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	Unscheduled construction/developments

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.

Fig. 7. A set of powerlines crossing a Late Iron Age stone walled site.

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 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.

8. CONCLUSION

The aim of the survey was to evaluate the heritage potential of an area through which it is proposed to construct a new electricity powerline. For this purpose, three alternative corridors were identified, all of which were reviewed as to their impact on heritage resources. The study was negatively influenced by a number of factors:

- Very little information exists on the area.
- Access to areas was not always possible.
- The uncertainty of the exact location of the identified corridors.

Despite this, it could be determined that a variety of cultural heritage sites occur in the area. These range from settlements to initiation sites, industrial and farming related sites as well as cemeteries. It is predicted that many more would be identified if a detailed survey is undertaken. Therefore, from a heritage point of view, it is anticipated that all of the identified corridors would, at least for shorter sections, have an impact on heritage sites. Selection of the preferred corridor is based on the criteria of the absence of Grade I sites as well as the least number of sites that would be impacted on. In this case, the northern corridor would definitely be the preferred route. On the other hand, existing impacts on sites in the central and southern corridors might make that an option, if the developer is willing to undertake large-scale mitigation measures, such as a detailed survey and excavation of selected sites which have already been impacted.

With reference to the two alternatives selected for each of the substations, the Marathon sites would, based on current information, not present any problems. In contrast, the Prairie substation alternatives occur in the area where some heavy fighting took place during the Anglo-Boer War and as a result there might be some emotional significance attached to the area. Therefore, it is recommended that these alternatives are investigated on ground level to determine if they would have an impact on the potential significance of the site.

Based on the above, it is anticipated that if the development takes place, it would be on condition of acceptance of the management measures as set out in Section 7 of this report. The most important of this would be the conducting of a full Phase 1 archaeological survey of the selected corridor in accordance with the requirements of Section 38(3) of the National Heritage Resources Act (Act 25 of 1999).

In the case where resources do occur, assessment of the potential impact of the development can only be done once a final corridor has been selected and tower positions determined. Mitigation of heritage sites implies first of all total avoidance, or, secondly, the recovery of sufficient data from the site in order that it can be studied and understood at a later stage. This latter scenario is not necessarily negative as science stands to benefit from such actions.

9. REFERENCES

Acocks, J.P.H. 1975. *Veld Types of South Africa*. Memoirs of the Botanical Survey of South Africa, No. 40. Pretoria: Botanical Research Institute.

Barnard, C. (red.) 1975. *Die Transvaalse Laeveld: kamee van 'n kontrei*. Kaapstad: Tafelberg Uitgewers.

De Jong, R.C, Van der Waal, G-M. & Heydenrych, D.H. 1988. *NZASM 100: The buildings, steam engines and structures of the Netherlands South African Railway Company*. Pretoria: Chris van Rensburg Publications.

Holm, S.E. 1966. *Bibliography of South African Pre- and Protohistoric archaeology*. Pretoria: J.L. van Schaik.

Krige, J.D. 1937. Traditional origins and tribal relationships of the Northern Transvaal. *Bantu Studies* 11(4):321-356.

Kruger, R. 1974. *Good-bye Dolly Gray: the story of the Boer War*. London: Pan Books

Mason, R.J. 1962. *Prehistory of the Transvaal*. Johannesburg: Witwatersrand University Press.

Mason, R.J. 1968. Transvaal and Natal Iron Age settlement revealed by aerial photography and excavation. *African Studies*. Vol. 27.

Richardson, D. 2001. *Historic sites of South Africa*. Cape Town: Struik Publishers.

Van Schalkwyk, J.A. 2007. *Heritage impact assessment for the planned development on portions of Ryton Estates, Waterval Boven municipal district, Mpumalanga Province*. Unpublished report 2007KH028. Pretoria: National Cultural History Museum.

Van Warmelo, N J. 1935. *Preliminary survey of the Bantu Tribes of South Africa*. Ethnological Publications No. 5. Pretoria: Government Printer.

10. PROJECT TEAM

J van Schalkwyk:

Principal Investigator: Iron Age, Colonial Period, Industrial Heritage - ASAPA Registration no. 164

APPENDIX 1: CONVENTIONS USED TO ASSESS THE SIGNIFICANCE OF IDENTIFIED SITES/FEATURES

Significance

The *significance* of the sites, features 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.

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			

APPENDIX 2. RELEVANT LEGISLATION

All archaeological and palaeontological sites, and meteorites are protected by the National Heritage Resources Act (Act no 25 of 1999) as stated in Section 35:

(1) Subject to the provisions of section 8, the protection of archaeological and palaeontological sites and material and meteorites is the responsibility of a provincial heritage resources authority: Provided that the protection of any wreck in the territorial waters and the maritime cultural zone shall be the responsibility of SAHRA.

(2) Subject to the provisions of subsection (8)(a), all archaeological objects, palaeontological material and meteorites are the property of the State. The responsible heritage authority must, on behalf of the State, at its discretion ensure that such objects are lodged with a museum or other public institution that has a collection policy acceptable to the heritage resources authority and may in so doing establish such terms and conditions as it sees fit for the conservation of such objects.

(3) Any person who discovers archaeological or palaeontological objects or material or a meteorite in the course of development or agricultural activity must immediately report the find to the responsible heritage resources authority, or to the nearest local authority offices or museum, which must immediately notify such heritage resources authority.

(4) No person may, without a permit issued by the responsible heritage resources authority-

(a) destroy, damage, excavate, alter, deface or otherwise disturb any archaeological or palaeontological site or any meteorite;

(b) destroy, damage, excavate, remove from its original position, collect or own any archaeological or palaeontological material or object or any meteorite;

(c) trade in, sell for private gain, export or attempt to export from the Republic any category of archaeological or palaeontological material or object, or any meteorite; or

(d) bring onto or use at an archaeological or palaeontological site any excavation equipment or any equipment which assist in the detection or recovery of metals or archaeological and palaeontological material or objects, or use such equipment for the recovery of meteorites.

In terms of cemeteries and graves the following (Section 36):

(1) Where it is not the responsibility of any other authority, SAHRA must conserve and generally care for burial grounds and graves protected in terms of this section, and it may make such arrangements for their conservation as it sees fit.

(2) SAHRA must identify and record the graves of victims of conflict and any other graves which it deems to be of cultural significance and may erect memorials associated with the grave referred to in subsection (1), and must maintain such memorials.

(3) No person may, without a permit issued by SAHRA or a provincial heritage resources authority-

(a) destroy, damage, alter, exhume or remove from its original position or otherwise disturb the grave of a victim of conflict, or any burial ground or part thereof which contains such graves;

(b) destroy, damage, alter, exhume, remove from its original position or otherwise disturb any grave or burial ground older than 60 years which is situated outside a formal cemetery administered by a local authority; or

(c) bring onto or use at a burial ground or grave referred to in paragraph (a) or (b) any excavation equipment, or any equipment which assists in the detection or recovery of metals.

(4) SAHRA or a provincial heritage resources authority may not issue a permit for the destruction or damage of any burial ground or grave referred to in subsection (3)(a) unless it is satisfied that the applicant has made satisfactory arrangements for the exhumation and re-interment of the contents of such graves, at the cost of the applicant and in accordance with any regulations made by the responsible heritage resources authority.

The National Heritage Resources Act (Act no 25 of 1999) stipulates the assessment criteria and grading of archaeological sites. The following categories are distinguished in Section 7 of the Act:

- **Grade I**: Heritage resources with qualities so exceptional that they are of special national significance;
- **Grade II**: Heritage resources which, although forming part of the national estate, can be considered to have special qualities which make them significant within the context of a province or a region; and
- **Grade III**: Other heritage resources worthy of conservation, and which prescribes heritage resources assessment criteria, consistent with the criteria set out in section 3(3), which must be used by a heritage resources authority or a local authority to assess the intrinsic, comparative and contextual significance of a heritage resource and the relative benefits and costs of its protection, so that the appropriate level of grading of the resource and the consequent responsibility for its management may be allocated in terms of section 8.

Presenting archaeological sites as part of tourism attraction requires, in terms 44 of the Act, a Conservation Management Plan as well as a permit from SAHRA.

(1) Heritage resources authorities and local authorities must, wherever appropriate, co-ordinate and promote the presentation and use of places of cultural significance and heritage resources which form part of the national estate and for which they are responsible in terms of section 5 for public enjoyment, education. research and tourism, including-

(a) the erection of explanatory plaques and interpretive facilities, including interpretive centres and visitor facilities;
(b) the training and provision of guides;
(c) the mounting of exhibitions;
(d) the erection of memorials; and
(e) any other means necessary for the effective presentation of the national estate.

(2) Where a heritage resource which is formally protected in terms of Part l of this Chapter is to be presented, the person wishing to undertake such presentation must, at least 60 days prior to the institution of interpretive measures or manufacture of associated material, consult with the heritage resources authority which is responsible for the protection of such heritage resource regarding the contents of interpretive material or programmes.

(3) A person may only erect a plaque or other permanent display or structure associated with such presentation in the vicinity of a place protected in terms of this Act in consultation with the heritage resources authority responsible for the protection of the place.

APPENDIX 3: SITE MAP

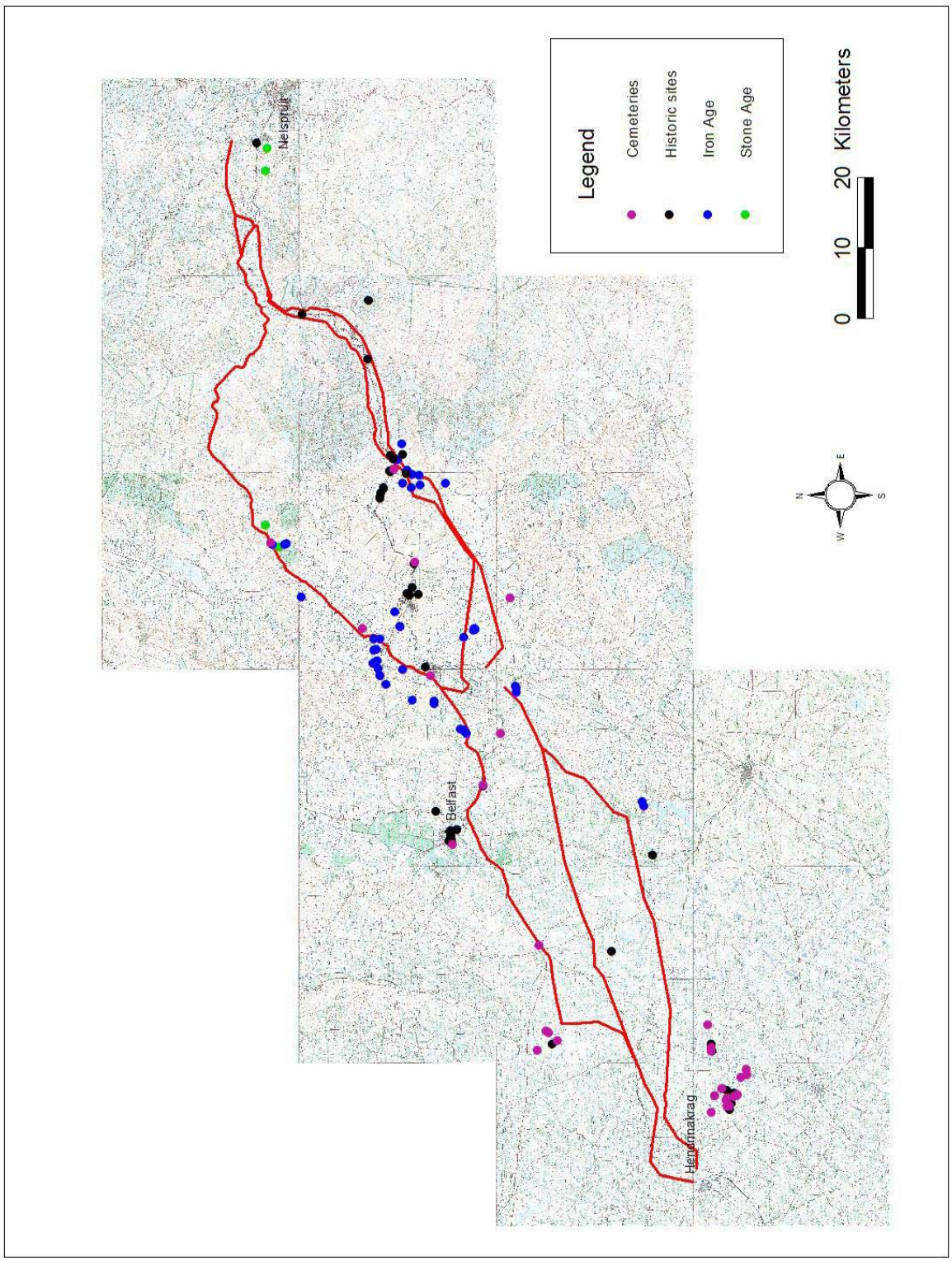

Fig. 8. Location of known sites of cultural significance in close proximity to the proposed corridors (n = 135).