



PHASE I ARCHAEOLOGICAL AND CULTURAL HERITAGE IMPACT ASSESSMENT SPECIALIST REPORT FOR THE PROPOSED DEVELOPMENT OF ESKOM INYANINGA 2 x 500 MVA 400/132 kV SUBSTATION, AND INYANINGA – MBEWU 400KV POWERLINE AND ASSOCIATED INFRASTRUCTURE WITHIN THE JURISDICTION OF ETHEKWINI METROPOLITAN, ILEMBE AND UTHUNGULU DISTRICT MUNICIPALITIES OF ETHEKWINI METROPOLITAN OF KWAZULU NATAL PROVINCE

April, 2018

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DECLARATION

ABILITY TO CONDUCT THE PROJECT

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EXECUTIVE SUMMARY

Vhubvo Archaeo-Heritage Consultant Cc has been requested by Nsovo Environmental Consulting to conduct the Cultural Heritage Impact Assessment (HIA) Study for the proposed powerline from Eskom Inyaninga Substation to Eskom Mbewu Substation within the jurisdiction of KwaZulu Natal Province. Thus, the proposed project entails the development of Eskom Inyaninga 2 X 500 Mva 400/132 Kv Substation, and approximately 100km Inyaninga – Mbewu 400kv powerline and associated infrastructure within the authority of eThekweni Metropolitan, as well as iLembe and uThungulu District Municipalities. The aim of the study was to entirely identify and document archaeological sites, cultural resources, sites associated with oral histories, graves, cultural landscapes, and any structure of historical significance that may be affected by the proposed powerline and associated activities, these will in turn assist the developer in ensuring proper conservation measure in line with the National Heritage Resource Act, 1999 (Act 25 of 1999). The findings of this study have been informed by desktop study and field survey. The desktop study was undertaken through SAHRIS for previous Cultural Heritage Impact Assessments conducted in the region of the proposed development, and also for researches that have been carried out in the wider area over the past years.

Background and Need of the Project

The eThekweni electricity network has four 275kV Transmission in-feeds from Georgedale, Hector, Illovo and Avon Substations. Underneath is the brief account of the aforesaid 275kV:

- Avon Substation supplies Ottawa and Durban North Substations;
- Georgedale and Hector Substations supply Klarwater Substation; and
- Illovo Substation supplies Durban South and Lotus Park Substations.

The load forecast shows load demand doubling in the geographical area supplied by Ottawa and Durban North Substations in the next 20 years or so. The area supplied by Klarwater is expected to grow by 20% and the area supplied by Durban South and Lotus Park Substations is expected to grow by 30% over the same period. Consequently, Eskom has proposed to construct the Shongweni Substation and the Hector-Shongweni 400kV powerline in order to cater for future electricity needs.

Receiving Environment

The proposed development will traverse on various communal and private owned farms in Wards 61 and 62 of eThekweni Metropolitan Municipality, and Wards 1, 3, 5, 7, 8, 9, 10, 11, 17, 21, 25 and 27 of iLembe District, as well as Wards 10, 11, 16, 17, 18, 19, 20, 21, 22, 23 and 24 of uThungulu District in the KwaZulu Natal Province. The area is currently used for various purposes including farming, residential and other related activities (see Figure 2 - 4). Furthermore, these area (s) are concentrated by undulating rolling hills. Although transformed, archaeological resources are not unexpected in these areas, especially graves in area



(s) where there are houses or historical farm dwellings. Three corridors had been proposed. The first corridor transverse over several villages, these villagers still bury their loved ones in their place of dwelling. In addition, this corridor also stretches on an empty land which could be ideal for isolated archaeological materials, or historic settlement such as stone walling which are wide spread in the area. The second corridor is located on an area which is significantly transformed and also cut across section of the R102 road, of significant to note is that the eastern section is concentrated by farming activities, while the western section is mostly residential and vacant space which is encroached by dense bush. Residential houses, small scale agriculture, railway lines and existing powerlines also characterises this alternative. Similarly to the first and second corridor (s), the third corridor has high percentage of residential property, and is located on a precipitous area. However, this corridor is the shortest and will thus cause minimal impact.

Furthermore to these three corridors, there are four areas proposed for substations and are referred to as Inyaninga B, F, X and X3. Inyaninga B and X3 are located on a similar area which is farmed throughout and fairly undulating, these area (s) are also characterised by industrial buildings on the southern section. Inyaninga F is located on an area which also farmed, and characterised by isolated industrial building as well as residential sites on the western section, there is also a river that cut across Inyaninga F. The final area proposed for substation is Inyaninga X and is fairly undulating and farmed throughout.

Impact statement

The construction of the proposed powerlines and substations will result in various threats to archaeological and graves sites in the vicinity of the new infrastructure (s), with impacts ranging from moderate to high. Thus, impact of the proposed powerline and substation on archaeological and cultural heritage remains is rated as being high to medium (see Table 1) on all proposed study areas. Noteworthy that the linear nature of the project area will, apart from the proposed substation and exact tower positions cause minimal impact to the ground. Furthermore, tower positions and substations can be moved to avoid direct impacts on heritage resources. It is important to note that all categories of heritage resource, with the possible exception of movable objects, are generally known to occur in the area proposed for development. The primary areas of concern in this study are the impacts on archaeological sites and the landscape which will be traversed by the proposed power lines. The presence of the power lines within a wide servitude will have a negative visual impact on heritage sites, and this impact will last for the lifespan of this proposed development. However, this is not addressed in this report as a separate report will be dealing with visual impacts.

Restrictions and Assumptions

Most of the area proposed for development is encroached by bush which make it almost impossible to access, henceforth a helicopter was utilised. It is thus possible that some materials could have been overlooked due to that the area was investigated only in a broad, overview approach as access to the different properties was not possible. Furthermore, several houses located on the proposed area (s) were



noted, and will have to be relocated. Most of the people in the area proposed for development bury their loved ones at home. The relocation of people will have a negative effect on grave sites.

It is assumed that the Social Impact Assessment and Public Participation Process might also result in the identification of sites, features and objects, including sites of intangible heritage potential in the corridors and that these then will also have to be considered in the selection of the preferred corridor. In addition, it is also assumed that a Visual Impact Assessment will be done to determine the impact of development on any identified heritage sites.

Survey sensation

The visibility of all area proposed for development was low, some of the area had to be surveyed by a helicopter.

Site-Location Model

Archaeologists who do research in the region generally accept a site-location model proposed by Maggs (1980). The model suggests that inland sites will be found in locations which bear the following:

- Limited to below an altitude of 1000 m asl;
- Situated on riverside or streamside locations, on deep alkaline colluvial soils; and
- In areas appropriate for dry-farming (with sufficient summer rainfall).

Survey Findings and Selection of Alternative

The main aim of the survey was to investigate potential heritage resources that occurs within the boundaries of the proposed corridor (s) and substations as well as to determine if there is any negative issues that can prevent the proposed development from taking place in any of the proposed study areas.

The landscape of the area proposed for development is comprised of two components, i.e., rural and semi-urban. Rural area is made up of villages which are to some extent sparsely populated, and it is here where graves are common. The second component is semi-urban and is characterised of industrial landscape, and possesses amongst others infrastructure elements such as major roads and bridges, and it is here where high scale farming is common.

Archaeological sites dating to the Stone, Iron and Historical Age as well as battle fields are known to occur in the study area at large. However, from the survey conducted, most of the known sites would only have an indirect impact. For example, power line crossing some distance from the site, thereby having only a visual impact. However, note should be taken that detailed information about the powerline and substation is still in early stage, e.g. the exact position of the powerline/substations/access roads are yet to be finalised, it might be possible that specific aspects related to development might have a direct disturbance, which would result in irreplaceable loss of heritage resources. Below are the sensitive areas that were noted during survey:

- ✚ Most of the households which are within the proposed corridors have family graves, the developers should thus avoid the corridor with the high percentage of households;



- ✚ Iron Age people preferred to settle on the alluvial soils close to rivers. All three corridors cut across the Mighty Tugela, as well as other tributaries which has vast of archaeological resources. River banks irrespective of extent are viewed to be sensitive and should be cautioned in the best way possible;
- ✚ The development is also located in semi-industrialised area, several historical farmsteads where noted, these should be avoided as far as possible;
- ✚ Finally, the proposed corridors cut across some of the old major roads, these roads contain bridge which are older than 60 years of age, and thus protected by the Heritage legislature.

The study area was investigated for sites of heritage significance that might be affected by the construction of the proposed powerline and substation. The only sign of sites of heritage potential were graves and historical structures found in various areas of corridors, as well as two significant Battlefields i.e., Ndongakasuka and Nyezane, and the memorial of Gingindlovu which are located in the vicinity of the proposed corridors. Although these won't be directly affected, the visual impact which will be caused by this proposal cannot be ignored. Despite that no remains of Stone/ Iron Age sites were noted during survey, the area could still contain camps and some areas with suitable substrates that could have been used as quarries for material to produce tools.

Taking the above information into account, it can be recommended that **Corridor 3** is the preferred alternative from a heritage impact perspective. This corridor is the shortest and it will result in minimal impact. Although the Battle of Nyezane Memorial is nearby, it is assumed that only visual impact will result, and this may be reduced by moving the powerline further to the western side, within the corridor. Noteworthy that no major heritage flaws which can hamper the success of this project were noted in any of the three identified corridors.

Four alternatives were investigated for the substations. Sites B, F and X3 have the same level of heritage sensitivity which is fairly moderate. However, Site X showed minimal signs of heritage sites. It is therefore recommended that **Site X** be considered from a heritage management point of view. It should still be noted that none of the sites within the other substations were of such high significance that the substation could not be constructed.

As the exact coordinates for the power line and the individual tower structures are not yet available, it is difficult to determine what the final impact of the proposed development would be like. Henceforth, for the project to continue, I, as an independent archaeologist due recommend the following:

A heritage practitioner should complete a “walk down” of the final selected power line servitudes, the chosen substation location and all other activity areas (access roads, construction camps, etc.) prior to the



start of any construction activities. This walk down will document all sites, features and objects, in order to propose adjustments to the routes and thereby to avoid as many impacts to heritage as possible.

Conclusions

A thorough background study and survey of the proposed development was conducted and findings were recorded in line with Amafa guidelines. As per the recommendations above, there are no major heritage reasons why the proposed development could not be allowed to proceed. Thus, it is recommended that the proposed development proceed on condition that the recommendation indicated above are adhered to.



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ACRONYMS AND ABBREVIATIONS

AIA	Archaeological Impact Assessment
EMP	Environmental Management Plan
HIA	Heritage Impact Assessment
LIA	Late Iron Age
MIA	Middle Iron Age
EIA	Early Iron Age
HMP	Heritage Management Plan
LSA	Late Stone Age
MSA	Middle Stone Age
ESA	Early Stone Age
NASA	National Archives of South Africa
NHRA	National Heritage Resources Act
PHRA	Provincial Heritage Resources Authority
SAHRA	South African Heritage Resources Agency
LIHRA	Limpopo Heritage Resource Authority



GLOSSARY OF TERMS

The following terms used in this Archaeology are defined in the National Heritage Resources Act [NHRA], Act Nr. 25 of 1999, South African Heritage Resources Agency [SAHRA] Policies as well as the Australia ICOMOS Charter (*Burra Charter*):

Archaeological Material: remains resulting from human activities, which are in a state of disuse and are in, or on, land and which are older than 100 years, including artifacts, human and hominid remains, and artificial features and structures.

Artefact: Any movable object that has been used, modified or manufactured by humans.

Conservation: All the processes of looking after a site/heritage place or landscape including maintenance, preservation, restoration, reconstruction and adaptation.

Cultural Heritage Resources: refers to physical cultural properties such as archaeological sites, palaeontological sites, historic and prehistorical places, buildings, structures and material remains, cultural sites such as places of rituals, burial sites or graves and their associated materials, geological or natural features of cultural importance or scientific significance. This include intangible resources such religion practices, ritual ceremonies, oral histories, memories indigenous knowledge.

Cultural landscape: “the combined works of nature and man” and demonstrate “the evolution of human society and settlement over time, under the influence of the physical constraints and/or opportunities presented by their natural environment and of successive social, economic and cultural forces, both internal and external”.

Cultural Resources Management (CRM): the conservation of cultural heritage resources, management, and sustainable utilization and present for present and for the future generations

Cultural Significance: is the aesthetic, historical, scientific and social value for past, present and future generations.



Chance Finds: means Archaeological artefacts, features, structures or historical cultural remains such as human burials that are found accidentally in context previously not identified during cultural heritage scoping, screening and assessment studies. Such finds are usually found during earth moving activities such as water pipeline trench excavations.

Compatible use: means a use, which respects the cultural significance of a place. Such a use involves no, or minimal, impact on cultural significance.

Conservation means all the processes of looking after a place so as to retain its cultural significance.

Expansion: means the modification, extension, alteration or upgrading of a facility, structure or infrastructure at which an activity takes place in such a manner that the capacity of the facility or the footprint of the activity is increased.

Grave: A place of interment (variably referred to as burial), including the contents, headstone or other marker of such a place, and any other structure on or associated with such place.

Heritage impact assessment (HIA): Refers to the process of identifying, predicting and assessing the potential positive and negative cultural, social, economic and biophysical impacts of any proposed project, plan, programme or policy which requires authorisation of permission by law and which may significantly affect the cultural and natural heritage resources. The HIA includes recommendations for appropriate mitigation measures for minimising or avoiding negative impacts, measures enhancing the positive aspects of the proposal and heritage management and monitoring measures.

Historic Material: remains resulting from human activities, which are younger than 100 years, but no longer in use, including artifacts, human remains and artificial features and structures.

Impact: the positive or negative effects on human well-being and / or on the environment.

In situ material: means material culture and surrounding deposits in their original location and context, for instance archaeological remains that have not been disturbed.



Interested and affected parties Individuals: communities or groups, other than the proponent or the authorities, whose interests may be positively or negatively affected by the proposal or activity and/ or who are concerned with a proposal or activity and its consequences.

Interpretation: means all the ways of presenting the cultural significance of a place.

Late Iron Age: this period is associated with the development of complex societies and state systems in southern Africa.

Material culture means buildings, structure, features, tools and other artefacts that constitute the remains from past societies.

Mitigate: The implementation of practical measures to reduce adverse impacts or enhance beneficial impacts of an action.

Place: means site, area, land, landscape, building or other work, group of buildings or other works, and may include components, contents, spaces and views.

Protected area: means those protected areas contemplated in section 9 of the NEMPAA and the core area of a biosphere reserve and shall include their buffers.

Public participation process: A process of involving the public in order to identify issues and concerns, and obtain feedback on options and impacts associated with a proposed project, programme or development. Public Participation Process in terms of NEMA refers to: a process in which potential interested and affected parties are given an opportunity to comment on, or raise issues relevant to specific matters.

Setting: means the area around a place, which may include the visual catchment.

Significance: can be differentiated into impact magnitude and impact significance. Impact magnitude is the measurable change (i.e. intensity, duration and likelihood). Impact significance is the value placed on the change by different affected parties (i.e. level of significance and



acceptability). It is an anthropocentric concept, which makes use of value judgments and science-based criteria (i.e. biophysical, physical cultural, social and economic).

Site: a spatial cluster of artifact, structures, organic and environmental remains, as residues of past human activity.



1. Introduction

At the request of Nsovo Environmental Consulting, Vhubvo Archaeo-Heritage Consultant Cc conducted a Phase I Archaeological and Cultural Heritage Assessment Study for the proposed powerline from Eskom Inyaninga Substation to Eskom Mbewu Substation within the jurisdiction of KwaZulu Natal Province. The proposed project entails the development of Eskom Inyaninga 2 X 500 Mva 400/132 kV Substation, and approximately 100km Inyaninga – Mbewu 400kv powerline and associated infrastructure within the authority of eThekweni Metropolitan, as well as iLembe and uThungulu District Municipalities. The survey was conducted in accordance with the SAHRA Minimum Standards for the Archaeology and Palaeontology. The minimum standards clearly specify the required contents of the report of this nature. The study aims to identify and document archaeological sites, cultural resources, sites associated with oral histories, graves, cultural landscapes, and any structure of historical significance that may be affected by the proposed development, these will in turn assist the developer in ensuring proper conservation measures in line with the National Heritage Resource Act, 1999 (Act 25 of 1999).

2. Sites location and Description

The proposed development will traverse various communal and private owned farms in Wards 61 and 62 of eThekweni Metropolitan Municipality, and Wards 1, 3, 5, 7, 8, 9, 10, 11, 17, 21, 25 and 27 of iLembe District, as well as Wards 10, 11, 16, 17, 18, 19, 20, 21, 22, 23 and 24 of uThungulu District in the KwaZulu Natal Province. The area is currently used for various purposes including farming, residential and other related activities (see Figure 2 - 4). Furthermore, these areas (s) are concentrated by undulating rolling hills. Although transformed, archaeological resources are not unexpected in these areas, especially graves in area (s) where there are houses or historical farm dwellings. Three corridors have been proposed, and will be described below:

Corridor 1

The first corridor transverse over several villages, these villagers still bury their loved ones in their place of dwelling. In addition, this corridor also stretches on an unused land which could be ideal for isolated archaeological materials, or historic settlement such as stone walling which are known to be wide spread in the area proposed for development.



Table 1: Anticipated impact rating.

Alternatives Corridor 1	Ratings
Nature	Negative
Topographical Extent	The impact will only affect site
Duration	Long term
Magnitude	Medium
Probability	Possible
Reversibility	Irreversible
Irreplaceable Loss	The impact can result in significant loss

Corridor 2

The corridor is located in a predominantly agricultural landscape and transverses across section of the R103 road, of significant to note is that the western section is mostly residential and vacant space which is encroached by dense bush. This vegetation limited visibility, therefore archaeological material can easily be missed in areas like this due to poor visibility. Residential houses, small scale agriculture, railway lines, bridge and existing powerlines also characterises this corridor.

Table 2: Anticipated impact rating.

Alternatives	Ratings
Nature	Negative
Topographical Extent	The impact will only affect the region.
Duration	Long term
Magnitude	Medium
Probability	Probable
Reversibility	Irreversible
Irreplaceable Loss	The impact will result in complete loss of resource

Corridor 3

This proposed corridor transverse over area of low scale-agriculture, small town (s), state forest, wilderness areas and is located on a precipitous area. Although residential dwellings were noted in this



corridor, most of these are in urbanised area where burial are conducted in a cemetery.

Table 3: Anticipated impact rating.

Alternatives	Ratings
Nature	Negative
Topographical Extent	The impact will only affect site.
Duration	Long term
Magnitude	Medium
Probability	Possible
Reversibility	Probable
Irreplaceable Loss	The impact will result in marginal loss of resources.

Substations Alternatives

Furthermore to these three corridors, there are four areas proposed for substations and are referred to as Inyaninga B, F, X and X3. Inyaninga B and X3 are located on a similar area which is under intensive agriculture throughout and fairly undulating, these areas (s) are also characterised by industrial buildings on the southern sections. Inyaninga F is located on an area which also under intensive agriculture, and characterised by isolated industrial building as well as residential sites on the western section, there is also a river that cut across Inyaninga F. The proposed Inyaninga X is fairly undulating and is also under intense agriculture.



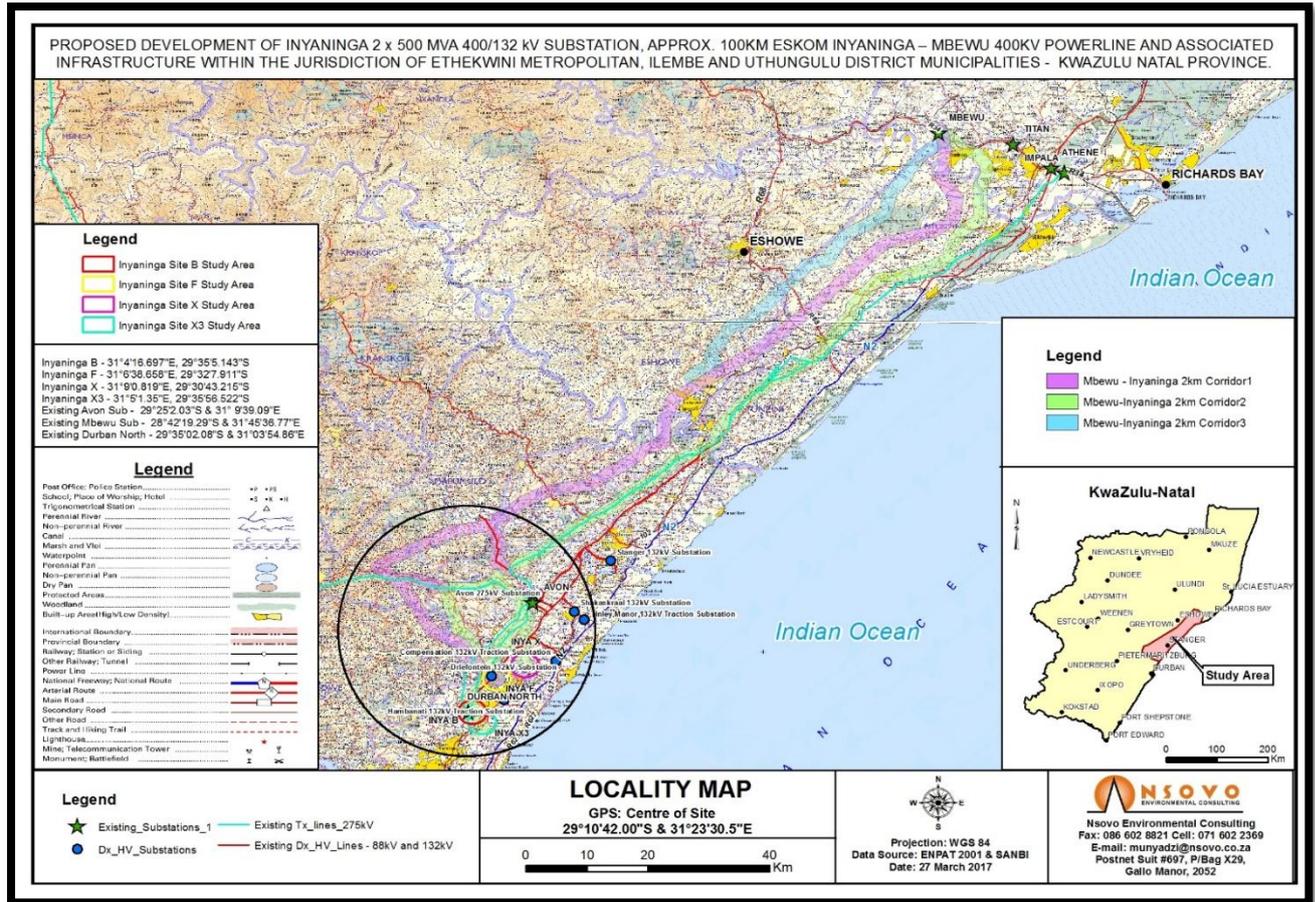


Figure 1: View of the topographical map of the proposed development.





Figure 2: View of section of the area proposed for the first corridor.



Figure 3: View of section of the area proposed for the second corridor.





Figure 4: View of section of the area proposed for the third corridor.

3. Nature of the Proposed project

The eThekweni electricity network has four 275kV Transmission in-feeds from Georgedale, Hector, Illovo and Avon Substations. Underneath is the brief account of the aforesaid 275kV:

- Avon Substation supplies Ottawa and Durban North Substations;
- Georgedale and Hector Substations supply Klaarwater Substation; and
- Illovo Substation supplies Durban South and Lotus Park Substations.

The load forecast shows load demand doubling in the geographical area supplied by Ottawa and Durban North Substations in the next 20 years or so. The area supplied by Klaarwater is expected to grow by 20% and the area supplied by Durban South and Lotus Park Substations is expected to grow by 30% over the same period. Consequently, Eskom has proposed to construct the Shongweni Substation and the Hector-Shongweni 400kV powerline in order to cater for future electricity needs.

4. Purpose of the Cultural Heritage Study

The purpose of this Archaeological and Cultural Heritage study was to entirely identify and document archaeological sites, cultural resources, sites associated with oral histories, graves, cultural landscapes, and any structure of historical significance that may be affected by the



proposed powerline and substation, these will in turn assist the developer in ensuring proper conservation measure in line with the National Heritage Resource Act, 1999 (Act 25 of 1999). Impact assessments highlight many issues facing sites in terms of their management, conservation, monitoring and maintenance, and the environment in and around the site. Therefore, this study involves the following:

- Identification and recording of heritage resources that maybe affected by the proposed powerline and substation,
- Providing recommendations on how best to appropriately safeguard identified heritage sites. Mitigation is an important aspect of any development on areas where heritage sites have been identified.

5. Methodology and Approach

5.1 Background study introduction

The methodological approach is informed by the 2012 SAHRA Policy Guidelines for impact assessment. As part of this study, the following tasks were conducted:

- 1) Literature review;
- 2) Consultations with the developer and appointed consultants;
- 3) Completion of a field survey;
- 4) Analysis of the acquired data, leading to the production of this report; and
- 5) Restrictions and Assumptions

5.1.1 Literature Review

The desktop study was undertaken through SAHRIS for previous Cultural Heritage Impact Assessments conducted in the region of the proposed development, and also for researches that have been carried out in the area over the past years, as well as historical aerial maps located in the Deeds Office. These literatures were used to screen the proposed area and to understand the baseline of heritage sensitivities.

5.1.2 Oral interview

Oral interview was not initiated.

5.1.3 Physical survey

The field survey was undertaken on the 22nd and 23rd of May 2017. An archaeologist from Vhubvo conducted the survey in the presence of Nsovo and Eskom official.

5.1.4 Documentation

The general project area was documented. This documentation included taking photographs using cameras a 10.1 mega-pixel Sony Cybershort Digital Camera. Plotting of finds was done by a Garmin etrex Venture HC.



5.1.5 Restrictions and Assumptions

Most of the area proposed for development is encroached by bush which make it almost impossible to access, henceforth a helicopter was utilised. It is thus possible that some materials could have been overlooked due to that the area was investigated only in a broad, overview approach as access to the different properties was not possible. Furthermore, several houses located on the proposed area (s) were noted, and may need to be relocated depending on the alternative selected as well as the final alignment of the powerline within the corridor. Most of the people in the study area bury their loved ones at home. The relocation of people will have a negative effect on grave sites.

It is assumed that the Social Impact Assessment and Public Participation Process might also result in the identification of sites, features and objects, including sites of intangible heritage potential in the corridors and that will also be considered in the selection of the preferred corridor. In addition, it is also assumed that a Visual Impact Assessment will be done to determine the impact of development on any identified heritage sites.

6. Applicable Heritage Legislation

Several legislations provide the legal basis for the protection and preservation of both cultural and natural resources. These include the National Environment Management Act (No. 107 of 1998); Mineral Amendment Act (No 103 of 1993); Tourism Act (No. 72 of 1993); Cultural Institution Act (No. 119 of 1998), and the National Heritage Resources Act (Act 25 of 1999). Section 38 (1) of the National Heritage Resources Act requires that where relevant, an Impact Assessment is undertaken in case where a listed activity is triggered. Such activities include:

- (a) *the construction of a road, wall, powerline, pipeline, canal or other similar form of linear development or barrier exceeding 300m in length;*
- (b) *the construction of a bridge or similar structure exceeding 50 m in length; and*
- (c) *any development or other activity which will change the character of an area of land, or water -*
 - (i) *exceeding 5 000 m² in extent;*
 - (ii) *involving three or more existing erven or subdivisions thereof; or*
 - (iii) *involving three or more erven or divisions thereof which have been consolidated within the past five years; or*
 - (iv) *the costs of which will exceed a sum set in terms of regulations by SAHRA or a Provincial Heritage Resources Authority;*
- (d) *the re-zoning of a site exceeding 10 000 m² in extent; or*
- (e) *any other category of development provided for in regulations by SAHRA or a Provincial Heritage Resources Authority, must at the very earliest stages of initiating such a development, notify the responsible heritage resources authority and furnish it with details regarding the location, nature and extent of the proposed development.*

Section 3 of the National Heritage Resources Act (25 of 1999) lists a wide range of national resources protected under the act as they are deemed to be national estate. When conducting a Heritage Impact Assessment (HIA) the following heritage resources have to be identified:



- (a) Places, buildings structures and equipment of cultural significance
- (b) Places to which oral traditions are attached or which are associated with living heritage
- (c) Historical settlements and townscapes
- (d) Landscapes and natural features of cultural significance
- (e) Geological sites of scientific or cultural importance
- (f) Archaeological and paleontological sites
- (g) Graves and burial grounds including-
 - (i) ancestral graves
 - (ii) royal graves and graves of traditional leaders
 - (iii) graves of victims of conflict
 - (iv) graves of individuals designated by the Minister by notice in the Gazette
 - (v) historical graves and cemeteries; and
 - (vi) other human remains which are not covered by in terms of the Human Tissue Act, 1983 (Act No. 65 of 1983)
- (h) Sites of significance relating to the history of slavery in South Africa
 - (i) moveable objects, including -
 - (i) objects recovered from the soil or waters of South Africa, including archaeological and paleontological objects and material, meteorites and rare geological specimens
 - (ii) objects to which oral traditions are attached or which are associated with living heritage
 - (iii) ethnographic art and objects
 - (iv) military objects
 - (v) objects of decorative or fine art
 - (vi) objects of scientific or technological interest; and
 - (vii) books, records, documents, photographic positives and negatives, graphic, film or video material or sound recordings, excluding those that are public records as defined in section 1 of the National Archives of South Africa Act, 1996 (Act No. 43 of 1996).

Section 3 of the National Heritage Resources Act (No. 25 of 1999) also distinguishes nine criteria for places and objects to qualify as 'part of the national estate if they have cultural significance or other special value ...' These criteria are the following:

- (a) Its importance in the community, or pattern of South Africa's history
- (b) Its possession of uncommon, rare or endangered aspects of South Africa's natural or cultural heritage
- (c) Its potential to yield information that will contribute to an understanding of South Africa's natural or cultural heritage
- (d) Its importance in demonstrating the principal characteristics of a particular class of South Africa's natural or cultural places or objects
- (e) Its importance in exhibiting particular aesthetic characteristics valued by a community or cultural group
- (f) Its importance in demonstrating a high degree of creative or technical achievement at particular period
- (g) Its strong or special association with a particular community or cultural group for social, cultural or spiritual reasons
- (h) Its strong or special association with the life or work of a person, group or organisation of importance in the history of South Africa; and
- (i) Sites of significance relating to the history of slavery in South Africa.

Other sections of the Act with a direct relevance to the AIA are the following:

Section 34(1) No person may alter or demolish any structure or part of a structure, which is older than 60 years without a permit issued by the relevant provincial heritage resources authority.



Section 35(4) *No person may, without a permit issued by the responsible heritage resources authority:*

- *destroy, damage, excavate, alter, deface or otherwise disturb any archaeological or palaeontological site or any meteorite*

Section 36 (3) *No person may, without a permit issued by SAHRA or a provincial heritage resources authority:*

- *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 formal cemetery administered by a local authority; or*
- *bring onto or use at a burial ground or grave any excavation equipment, or any equipment which assists in detection or recovery of metals.*

7. Degree of Significance

This category requires a broad, but detailed knowledge of the various disciplines that might be involved. Large sites, for example, may not be very important, but a small site, on the other hand, may have great significance as it is unique for the region.

Significance rating of sites

(i) High

(ii) Medium

(iii) Low

This category relates to the actual artefact or site in terms of its actual value as it is found today, and refers more specifically to the condition that the item is in. For example, an archaeological site may be the only one of its kind in the region, thus its regional significance is high, but there is heavy erosion of the greater part of the site, therefore its significance rating would be medium to low. The following are guidelines for the nature of the mitigation that must take place as Phase 2 of the project.

High

- This is a 'do not touch' situation, alternative must be sought for the project, examples would be natural and cultural landscapes like the Mapungubwe Cultural Landscape World Heritage Site, or the house in which John Langalibalele resided.
- Certain sites, or features may be exceptionally important, but do not warrant leaving entirely alone. In such cases, detailed mapping of the site and all its features is imperative, as is the collection of diagnostic artefactual material on the surface of the site. Extensive excavations must be done to retrieve as much information as possible before destruction. Such excavations might cover more than half the site and would be mandatory; it would also be advisable to negotiate with the client to see what mutual agreement in writing could be reached, whereby part of the site is left for future research.

Medium



- Sites of medium significance require detailed mapping of all the features and the collection of diagnostic artefactual material from the surface of the site. A series of test trenches and test pits should be excavated to retrieve basic information before destruction.

Low

- These sites require minimum or no mitigation. Minimum mitigation recommended could be a collection of all surface materials and/ or detailed site mapping and documentation. No excavations would be considered to be necessary.

This category requires a broad, but detailed knowledge of the various disciplines that might be involved. It must be borne in mind that the significance of a site from an archaeological perspective does not necessarily depend on the size of the site but more on the uniqueness of the site within a region. The following table is used to grade heritage resources:

Table 4: Grading systems for identified heritage resources in terms of National Heritage Resources Act (Act 25 of 1999).

Level	Significance	Possible action
National (Grade I)	Site of National Value	Nominated to be declared by SAHRA
Provincial (Grade II)	Site of Provincial Value	Nominated to be declared by PHRA
Local Grade (IIIA)	Site of High Value Locally	Retained as heritage
Local Grade (IIIB)	Site of High Value Locally	Mitigated and part retained as heritage
General Protected Area A	Site of High to Medium Value	Mitigation necessary before destruction
General Protected Area B	Medium Value	Recording before destruction
General Protected Area C	Low Value	No action required before destruction

Significance rating of sites

(i) High

(ii) Medium

(iii) Low

These categories relate to the actual artefact or site in terms of its actual value as it is found today, and refers more specifically to the condition that the item is in. For example, an archaeological site may be the only one of its kind in the region, and will thus be considered to be of high regional significance, however; should there be heavy erosion of the greater part of



the site, its significance rating would be medium to low. The following are guidelines for the nature of the mitigation that must take place as Phase 2 of the project.

High

- This is a ‘do not touch’ situation, alternative must be sought for the project, examples would be natural and cultural landscapes like the Mapungubwe Cultural Landscape World Heritage Site, or the house in which John Langalibalele resided.
- Certain sites, or features may be exceptionally important, but do not warrant leaving entirely alone. In such cases, detailed mapping of the site and all its features is imperative, as is the collection of diagnostic artefactual material on the surface of the site. Extensive excavations must be done to retrieve as much information as possible before destruction. Such excavations might cover more than half the site and would be mandatory; it would also be advisable to negotiate with the client to see what mutual agreement in writing could be reached, whereby part of the site is left for future research.

Medium

- Sites of medium significance require detailed mapping of all the features and the collection of diagnostic artefactual material from the surface of the site. A series of test trenches and test pits should be excavated to retrieve basic information before destruction.

Low

- These sites require minimum or no mitigation. Minimum mitigation recommended could be a collection of all surface materials and/ or detailed site mapping and documentation. No excavations would be considered to be necessary.

In all the above scenarios, permits will be required from the South African Heritage Resources Agency (SAHRA) or the appropriate PHRA as per the legislation (the National Heritage Resources Act, no. 25 of 1999). Destruction of any heritage site may only take place when the appropriate heritage authority has issued a permit. The following table is used to determine rating system on the receiving environment.

Table 5: Rating and evaluating criteria of impact assessment

NATURE
Including a brief description of the impact of the heritage parameter being assessed in the context of the project. This criterion includes a brief written statement of the



heritage aspect being impacted upon by a particular action or activity.

TOPOGRAPHICAL EXTENT

This is defined as the area over which the impact will be expressed. Typically, the severity and significance of an impact have different scales and as such bracketing ranges are often required. This is often useful during the detailed assessment of a project in terms of further defining the determined.

1	Site	The impact will only affect site.
2	Local/district	Will affect the local area or district.
3	Province/region	Will affect the entire province or region.
4	International and National	Will affect the entire country.

PROBABILITY

This describes the chance of occurrence of an impact

1	Unlikely	The chance of the impact occurring is extremely low (Less than 25% chance of occurrence).
2	Possible	The impact may occur (Between a 25% to 50% chance of occurrence).
3	Probable	The impact will likely occur (Between 50% to 75% chance of occurrence).
4	Definite	Impact will certainly occur (Greater than 75% chance of occurrence).

REVERSIBILITY

This describes the degree to which an impact on a heritage parameter can be successfully reversed upon completion of the proposed activity.

1	Completely reversible	The impact is reversible with implementation of minor mitigation measures.
2	Partly reversible	The impact is partly reversible but more intense mitigation measures are required.
3	Barely reversible	The impact is unlikely to be reversed even with intense mitigation measures.
4	Irreversible	The impact is irreversible and mitigation



		measures exist.
IRREPLACEABLE LOSS OF RESOURCES		
This describes the degree to which heritage resources will be irreplaceably lost as a result of proposed activity		
1	No loss of resource	The impact will not result in the loss of any resources.
2	Marginal loss of resource	The impact will result in marginal loss of resources.
3	Significant loss of resource	The impact will result insignificant loss of resources.
4	Complete loss of resource	The impact is result in a complete loss of all resources.
DURATION		
This describes the duration of the impact on the heritage parameter. Duration indicates the lifetime of a result of the proposed activity.		
1	Short term	The impact and its effects will either disappear with mitigation or will be mitigated through natural process in span shorter than the construction phase (0-1 years), or the impact and its effects will last for the period of a relatively short construction period and a limited recovery time after construction, thereafter it will be entirely negated (0-2 years).
2	Medium term	The impact and its effects will continue or last for some time after the construction phase but will be mitigated by direct human action or by natural processes thereafter (2-10 years).
3	Long term	The impact and its effects will continue or last for entire operational life of the development, but will be mitigated by



		direct human action or by natural processes thereafter (10-50 years).
4	Permanent	The only class of the impact that will non-transitory. Mitigation either by man or natural process will not occur in such a way or such a time span that the impact can be considered transient (Indefinite).

CUMULATIVE EFFECT

This describes the cumulative effect of the impacts on the heritage parameter. A cumulative effect/impact is an effect, which in itself may not be significant but may become significant if added to other existing or potential impacts emanating from similar or diverse activities as a result of the project activity in question.

1	Negligible Cumulative Impact	The impact would result in negligible to no cumulative effects.
2	Low Cumulative Impact	The impact would result in insignificant cumulative effects
3	Medium Cumulative Impact	The impact would result in minor cumulative effects
4	High Cumulative Impact	The impact would result in significant cumulative effects.

MAGNITUDE

Describes the severity of an impact.

1	Low	Impact affects the quality, use and integrity of the system/component in a way that is barely perceptible.
2	Medium	Impact alters the quality, use and integrity of the system/component but system/ component still continues to function in a moderately modified way and maintains general integrity (some impact on integrity).
3	High	Impact affects the continued viability of



		the system/component and the quality, use, integrity and functionality of the system or component is severely impaired and may temporarily cease. High costs of rehabilitation and remediation.
4	Very High	Impact affects the continued viability of the system/component and the quality, use, integrity and functionality of the system or component permanently ceases and is irreversibly impaired (system collapsed).Rehabilitation and remediation often impossible .If possible rehabilitation and remediation often unfeasible due to extremely high costs of rehabilitation and remediation.

8. History of Kwa-Zulu Natal

Environmental conditions played an important role in influencing past human settlements in the KwaZulu-Natal. As captured in the KwaZulu-Natal Museum, heritage site inventories indicate a wide spectrum of archaeological sites covering different time-periods and cultural traditions in the KZN region.

Stone Age

ESA sites in this Province have produced very little with regards to other archaeological remains and much is not known about their period. Although Early Stone Age sites occur at various locations in the Province, none of them are in context and occur mostly in open-air situations, or in dongas close to water with little in-situ material. These sites were inhabited by Homo erectus and Homo heidelbergensis who were for the most part scavengers. Apart from stone artefacts, no preserved archaeological remains have been preserved dating back to this period. No information is known on the food eaten by ESA people in Natal, but it can be assumed that their diet consisted of animals and plant food (Mazel 1989). Oliver Davies a pioneer archaeologist being the only person to research ESA period in KwaZulu-Natal has recognized different



traditions of Early Stone Age traditions in KwaZulu-Natal. All these traditions are characterised by heavy tools made from cores such as scrapers and picks, hand axes and cleavers (Davies 1976; Mazel 1989).

MSA period dates between 40 000 years and 200 000 years ago. Clear technological differences separate MSA from ESA tools which were generally core tools, while MSA tools were made of flakes and blades detached from the core (Mazel 1989). Various Middle Stone Age sites occur in the KZN region and the vast majority of these are open air sites or sites with little stratigraphic value. However, cave sites with Middle Stone Age deposits do occur in KwaZulu-Natal as well. A few sites with impressive MSA deposits have been excavated in KZN, which includes the Sibudu Cave, Holley Shelter, Umbeli Belli Shelter, Umhlatuzana Cave, and Border Cave (Mazel 1989). All these sites provided impressive evidence for fine resolution data and detailed stratigraphy as well as evidence for early farms relating to the period associated with the origins of anatomically modern people in the MSA of South Africa (Tomose 2014; Wadley 2001; Wadley 2005; Wadley & Jacobs 2006).

The Late Stone Age (LSA) sites occur throughout the province, the caves, plains and hills of this region contain sites with rock art from the San and Khoi San cultural groups. The Later Stone Age is generally associated with San hunter-gatherers or their immediate ancestors in KwaZulu-Natal. The region is renowned for the prolific LSA San rock painting sites concentrated in the areas such as Giants Castle, Ukhahlamba and Kamberg in the Drakensberg Mountains where rock shelters suitable for occupation are plentiful. It is important to note that rock art sites do occur outside the Drakensberg; such as rock art sites documented in the areas around Escourt, Mooi River and Dundee, however, these sites have not been afforded similar research attention as those sites occurring in the Drakensberg (Mazel 1989). According to the KwaZulu-Natal Museum archaeological database Later Stone Age sites have also been located in the Tugela River in the past but these are mostly restricted to surface scatters.

Iron Age

Pottery production is also an important feature of Iron Age communities. Iron smelting was practised quite significantly by Iron Age society as they had to produce iron implements for agricultural use. There is however no information of the area having iron smelting areas. Although Iron Age people occasionally hunted and gathered wild plants and shellfish, the bulk of



their diet consisted of the crops they cultivated as well as the meat of the animals they kept. The LIA is not only distinguished from the EIA by greater regional diversity of pottery styles but is also marked by extensive stone wall settlements. However, stone walls were not common as Nguni people used thatch and wood to build their houses.

The archaeological evidence of the Iron Age people in the province is represented through distinct ceramic traditions, stone walls and other structural features such as grain bins and hut floor remains, kraal remains, vitrified cattle dung (sheep and goat), iron implements, slugs, bellows and furnaces (Huffman 2007; Maggs 1984a, 1989; Mitchell 2002). Iron Age occupation in KwaZulu-Natal was during the Early and Late Iron Age. There is no evidence of occupation during Middle Iron Age. Occupation of the KZN region was by the Bantu speakers who migrated from as far as the Great Lakes regions of Congo and Cameroon (Tomose 2014). Recently research has suggested that it may have been too dry further inland at this time for successful cultivation. However, from AD 650 climatic conditions improved and agriculturalists expanded into the valleys of KZN, where they settled close to rivers in savanna or bushveld environments (van Schalkwyk 2013). These conditions supported sorghum and millet production and cattle management in the grassland component of these environments (Maggs 1984a, 1989; Mitchell 2002). In KwaZulu-Natal, the most dominant and preferred form of Iron Age structures are the 'beehive huts'- documented in many of historical records dating as far back as the colonial times (Tomose 2013).

KZN was occupied by the Nguni speaking group of the Eastern Bantu language stream is characterised by settlement patterns defined as the Central Cattle Pattern (CCP) (Huffman, 2010, 2007). The earliest known type of stonewalling that characterizes this settlement pattern (CCP) in the region (KZN) is known as Moor Park, which dates from the 14th to 16th Centuries AD (Huffman, Whitelaw, Davis 1974) (Figure 13). This type of stonewalling can be found in defensive position on hilltops in the Midlands of KZN (Huffman, 2010 & 2007).

The EIA sites in KZN date to around AD 500 to AD 900. Extensive research in the province of this period led to it being divided in the following time lines according to ceramic styles (Maggs, 1989; Huffman 2007): Msuluzi (AD500); Ndondondwane (AD 700-800); and Ntshekane (AD 800-900). The archaeological database of the Natal Museum indicates that ten Early Iron Age sites occur in the immediate vicinity of the study area. Some well-known excavated sites such as Mamba, Whosi and Ndondondwane (Huffman 2007) occur in the banks of the Thukela River. EIA sites in KZN are found in level valley-bottom situations with tillable (colluvial and alluvial)



arable soils and close to rivers or lake shorelines with opportunities for grazing and for obtaining timber (Maggs 1980, 1994–95; Tomose 2014; van Schalkwyk & Wahl 2013). The LIA is not only distinguished from the EIA by greater regional diversity of pottery styles but is also marked by extensive stonewall settlements. However, in this part of the world, stonewalls were not common as the Nguni people used thatch and wood to build their houses (Maggs, 1989; Huffman 2007). An astonishing 82 Later Iron Age sites (belonging to the period 1200 AD – 1880 AD) has been recorded in the Hluhluwe Nature Reserve.

Historical Period

The Portuguese explorer Vasco de Gama named Natal in 1497. The colonial history of the area starts around 1820 when early English ivory traders established themselves at Port Natal (Durban), at the time when Shaka, King of the Zulu was firmly in charge of the hinterland. They made almost no attempt to develop the interior, whose inhabitants had been decimated by the Zulu chief Shaka. During 1837 the Dutch descendants (i.e. Voortrekkers) entered the area through the Drakensberg passes, and defeated the Zulus at the Battle of Blood River in 1838 and thereafter established a short-lived Boer republic called Natalie. However, by 1845 Natal became a British colony. Between 1860 and 1911 shiploads of Indians brought in by British arrived to work in the coastal sugar plantations (www.sahistory.org.za; www.zulu.org).

Northern and central KwaZulu-Natal is strewn with sites of battles between the Zulu, Boer and British during the 1800's and 1900's. In 1879 the British finally conquered the Zulu in the Anglo-Zulu War and acquired the Zululand (the area north of the Tugela River). The lands north of the Buffalo River were added in 1902. These conflicts are now collectively known as the South African War. A result of these conflicts was the construction of many forts in the area. Several colonial buildings, gravesites, monuments, stone Cairns and statues dating from the later 19th century as well as subsequent periods abound in the province. These are the legacy of this violent time in our history, like the archaeological resources of the province, are also protected by heritage legislation (Derwent 2006).

In 1910 Natal colony became a province of the Union of South Africa. In 1961 Natal was declared the province of Republic of South Africa. After the end of Apartheid in 1994 the homeland of KwaZulu was re-incorporated into the Natal province and was renamed to KwaZulu-Natal. KwaZulu, means "Place of the Zulu". The KZN province is home to the Zulu monarchy; the majority population and language of the province is Zulu. It is the only province in South Africa that has the name of its dominant ethnic group as part of its name



(www.sahistory.org.za; www.zulu.org).

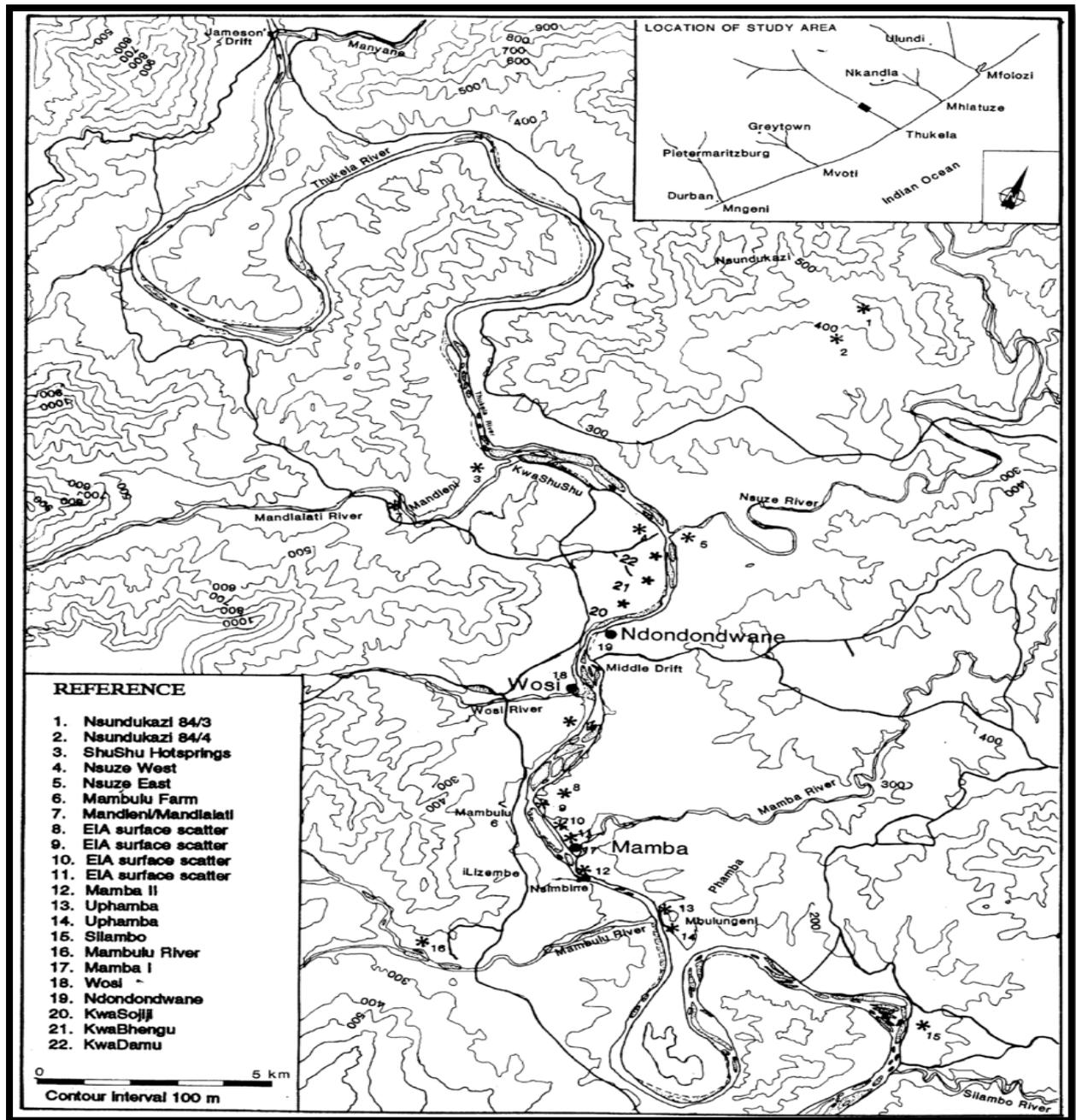


Figure 5: Map of Ndongondwane phase archaeological sites in the lower Thukela River valley (Greenfield and Van Schalkwyk 2008).

9. History of the Area Proposed for Development

Three different municipalities will be explored in terms of their archaeological and heritage history. These municipalities are eThekweni Metropolitan Municipality, iLembe and uThungulu



District municipalities. We can conclude that the archaeology of the region affected by this proposal spans for all three archaeological periods known in South Africa: The Stone Age, Iron Age and Historical/Colonial period.

Stone Age

Numerous Stone Age sites have been recorded in the general area of the study area. This area is home to all three known phases of the Stone Age namely the Early Stone Age (ESA), Middle Stone Age (MSA) and Late Stone Age (LSA) (Maggs 1989, Mazel 1989).

The greater eThekweni Metropolitan area has been relatively well surveyed for archaeological heritage sites by the KwaZulu-Natal Museum and subsequently by private heritage consultants in the last two decades or so. The available evidence, as captured in the Amafa and KwaZulu-Natal Museum heritage site inventories, indicates that eThekweni municipality contains a wide spectrum of archaeological sites covering different time-periods and cultural traditions. Although Early Stone Age sites occur at various locations in the area, none of them are in context and occur mostly in open air situations. These sites were inhabited by *Homo erectus* and *Homo heidelbergensis* who were for the most part scavengers. The pioneer archaeologist Oliver Davies has recognised different traditions of Early Stone Age traditions in KwaZulu-Natal. All these traditions contained heavy tools made from cores such as hand axes, cleavers, and pics. Early Stone Age sites typically occur close to water.

Two notable Middle Stone Age sites, i.e. Umlatuzana near Marianhill and Segubudu near Stanger have been excavated in the last two decades and yielded impressive archaeological stratigraphies relating to the period associated with the origins of anatomically modern people. Apart from an impressive stone tool assemblage covering both Later and Middle Stone Age, these sites also yielded faunal remains of large mammals that became extinct during the early Holocene such as the giant buffalo (*Pelarovis sp*). Also notable is the Shongweni Later Stone Age shelter which was excavated in the 1970's by Dr Oliver Davies. This shelter yielded some of the earliest remains of domesticated cereals in South Africa. The same site also yielded some of the only San rock art in the eThekweni municipality (Mazel 1989; Mitchell 2002).

The greater UThungulu municipality have been widely researched by the KZN museum, researchers and students from Witwatersrand University and many other private entities. The available evidence, as captured in the Amafa and the KwaZulu-Natal Museum heritage site inventories indicates that this area contains a wide spectrum of archaeological sites covering



different time-periods and cultural traditions. These range from Early Stone Age, Middle Stone Age, and Later Stone Age to Early Iron Age, Middle and Later Iron Age sites as well as historical sites relating to the rise of the Zulu Kingdom and the subsequent colonial period.

One notable Middle Stone Age site, i.e. Segubudu located south of Amatikulu near Stanger in had been excavated in the last two decades by the University of the Witwatersrand and yielded impressive archaeological stratigraphy's relating to the period associated with the origins of anatomically modern people (Mitchell 2002).

Similar to the previously mentioned municipalities, the Ilembe municipality was researched by the KZN museum. However little attention was given to this area as there is very limited information of its archaeological records. Apart from stone artefacts, the ESA sites in the area have produced very little as regards to other archaeological remains. This has made it difficult to make inferences pointing to economical dynamics of the ESA people of the area. This in term resulted in the difficulties of diet reconstruction of the Early Stone Age inhabitants and due to that, the researchers relied on evidence from elsewhere that it comprised primarily of animal and plant foods (Mazel 1989). A few sites with impressive MSA deposits have been excavated in the province. Perhaps the best known ones are Sibudu Cave and Umhlatuzana Cave, as well as Border Cave. All these sites provided impressive evidence for fine resolution data and detailed stratigraphy (Wadley & Jacobs, 2006; Wadley, 2007).

The San in the coastal areas of KZN were the first to have been displaced by incoming African agro pastoralists. However, some San groups continue to practice their hunter gatherer lifestyle in the foothills of the Drakensberg until the period of white colonialisation around the 1840's (Wright & Mazel, 2007). According to the Natal Museum archaeological database, Later Stone Age sites have been located in the Tugela River in the past but these are mostly restricted to surface scatters. Also dating to the LSA period is the impressive Rock Art found on cave walls and rock face.

Iron Age

Early Iron Age farmers in southeastern South Africa typically established small, permanent villages on the rich alluvial soils beside lakes and rivers. Most EIA sites were occupied for a relatively long duration of time, often several hundred years, with the reoccupation of the same places creating a palimpsest of flat, expansive settlements. Ndongondwane is the type site of the Ndongondwane phase in the cultural historical sequence of eastern South Africa. It is located on



a relatively flat expanse of the northern bank of the lower Thukela River at Middledrift, on the deep well-drained red soils that predominate along the riverbanks and foot-slopes where other EIA sites are found. The initial wave of the first Early Iron Age people settled along the inland foot, on the rich soil that allowed food production around 1700 years ago. These early agro-pastoralists produced a characteristic pottery style known as Matola. The Matola people also exploited the wild plant and animal resources of the forest and adjacent sea-shore. However the communities seemed to have been small groups of cultivators moving into a landscape sparsely inhabited by Later Stone Age San hunter-gatherers. Another wave of Iron Age migrants entered the area by 1500. Their distinct ceramic pottery is classified to styles known as “Msuluzi” (AD 500-700), Ndongondwane (AD 700-800) and Ntshokane (AD 800-900) (Maggs 1989; Huffman 2007). Three sites belonging to these periods occur along the banks of the Tugela River not far away from the town of Mandeni. Other EIA potsherds have been located closer to Maphumulo area.

Closer to the coast, archaeologists have also identified two Early Iron Age sites and middens with Later Iron Age material. Heritage Impact Assessment surveys conducted by Umlando located various Later Iron Age sites. These sites are all indicated by small surface scatters of undecorated pottery and are not particularly highly rated in terms of heritage significance but are however protected by heritage legislation. The well-known Ndongakusuka and Gingindlovu Battle Sites are also within the jurisdiction of these municipalities.

Historical Period

The colonial history of the area starts around 1820 when early English ivory traders established themselves at Port Natal (Durban). Dutch descendants (i.e. Voortrekkers) moved into the area soon after 1834 and established a short lived Boer republic called Natalia. However, before Europeans arrived, the study area (*Amatikulu to be precise*) was intimately associated with the rise of the Zulu Kingdom of Shaka in the early 1820's. King Shaka had his capital at Kwa-Dukuza or Stanger. From 1824, the first European Settlers started to arrive in sailing ships from the Cape. They met and obtained land around the bay from King Shaka, and called their tiny settlement Port Natal. Later, it was to be re-named Durban, after Cape Governor D'Urban. Handful settlers befriended and traded with King Shaka and the Zulus who were living in Zululand. Items such as elephant tusk ivory, skins and carvings, were traded for the settler's beads, cloth, food and trinkets. Nonetheless, due to family feuds, King Shaka was assassinated in 1828. The exact spot



Two well-known British forts of this period occur not far from the study area, these are the twin forts of Pearson and Tenedos. They were built across from each other on either side of the mouth of the Tugela in 1878 and 1879 respectively.

The battle site of Ndonakusuka took place on the northern bank of the Tugela River. Here Zulu warriors under Mpande attacked and decimated a force of settlers from Port Natal and several thousand black levies in April 1838. The force had been raised to assist the beleaguered Voortrekker laagers, then under systematic attack by the Zulu. Some years later Ndonakusuka again became the scene of a great battle between Prince Cetshwayo and his brother, Mbuyazi the bloodiest battle ever fought on South African soil (Derwent 2006). By 1845 Natal became a British colony. The area to the north of the Tugela River remained independent Zulu territory. However, in 1879 Zulu-land was invaded by British forces and the area annexed soon thereafter. The Battle of Gingindlovu took place shortly after the Battle of Kambula and Rorkes drift.

10. Survey Findings

The main aim of the survey was to investigate heritage resources that would occur within the boundaries of the proposed corridor and substations as well as to determine if there is any negative impact that can prevent the proposed development from taking place in any of the proposed study areas. The landscape of the area proposed for development is comprised of two components, i.e., rural and urban. The rural area is made up of villages which are to some extent sparsely populated, and it is here where graves are common. The second component is semi-urban and it is characterised of industrial landscape, and possesses amongst others infrastructure elements such as major roads and bridges, and it is here where high scale farming is common.

Archaeological sites dating to the Stone, Iron and Historical Age are known to occur in the region of study area. However, from the survey conducted, most of the known sites would only have an indirect impact. For example, power line crossing some distance from the site, thereby having only a visual impact. However, note should be taken that detailed information about the powerline and substation is still in early stage, e.g. the exact position of the powerline/substations/access roads are yet to be finalised, it might be possible that specific aspects related to development might have a direct disturbance, which would result in irreplaceable loss of heritage resources. Below are the sensitive areas that were noted during survey:



- ✚ Most of the households which are within the proposed corridors have family graves, the developers should thus avoid the corridor with the high percentage of households;
- ✚ Iron Age people preferred to settle on the alluvial soils close to rivers. All three corridors cut across the Mighty Tugela, as well as other tributaries which has vast of archaeological resources. River banks irrespective of extent are viewed to be sensitive and should be cautioned in the best way possible;
- ✚ The development is also located in semi-industrialised area, several historical farmsteads where noted, these should be avoided as far as possible;
- ✚ Finally, the proposed corridors cut across some of the old major roads, these roads contain bridge which are older than 60 years of age, and thus protected by the Heritage legislature.

The study area was investigated for sites of heritage significance that might be affected by the construction of the proposed powerline and substation. The only sign of sites of heritage potential were graves and historical structures found in various areas of corridors, as well as two significant Battlefields i.e., Ndongakasuka and Nyezane, and the memorial of Gingindlovu which are located in the vicinity of the proposed corridors. Although these won't be directly affected, the visual impact which will be caused by this proposal should be considered. Despite that no remains of Stone/ Iron Age sites were noted during survey, the area could still contain camps and some areas with suitable substrates that could have been used as quarries for material to produce tools.

Taking the above information into account, it can be recommended that **Corridor 3** is the preferred alternative from a heritage impact perspective. This corridor is the shortest and it will result in minimal impact. Although the Battle of Nyezane Memorial is nearby, it is assumed that only visual impact will result, and this may be reduced by moving the powerline further to the western side, within the corridor. Noteworthy that no major heritage flaws which can hamper the success of this project where noted in any of the three identified corridors.

Four alternatives were investigated for the substations. Sites B, F and X3 have the same level of heritage sensitivity which is fairly moderate. However, Site X showed minimal signs of heritage sites. It is therefore recommended that **Site X** be considered from a heritage management point of view.



11. Recommendations

The exact coordinates for the power line and the individual tower structures are not yet available. This limitation makes it difficult to determine what the final impact of the proposed development would be like. Henceforth, for the project to continue, I, as an independent archaeologist due recommend the following:

A heritage practitioner should complete a “walk down” of the final selected power line servitudes, the chosen substation location and all other activity areas (access roads, construction camps, etc.) prior to the start of any construction activities. This walk down will document all sites, features and objects, in order to propose adjustments to the routes and thereby to avoid as many impacts to archaeological sites and graves as possible. Graves are often the focus of emotional and ethical sentiments by their relation to people. Graves are varied in terms of age, and thus protected by Section 3 of the National Heritage Resource Act, 1999 (Act 25 of 1999) and the Human Tissues Act, 1983 (Act 65 of 1983) as amended. Section 36 (3) of the NHRA 25 of 1999 further protects these graves against any alterations. Dealing with human remains thus requires the highest ethical standards, Section 36 (3) of the NHRA states that, no person may, without a permit issued by SAHRA or a provincial heritage resources authority (Amafa): 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. In addition, The World Archaeological Congress (WAC) has set international ethical standards for the treatment of human remains, these includes:

- Respect for the mortal remains of the dead shall be accorded to all, irrespective of origin, race, religion, nationality, custom and tradition,
- Respect for the wishes of the dead concerning disposition shall be accorded whenever possible, reasonable and lawful, when they are known or can be reasonably inferred
- Respect for the wishes of the local community and of relatives or guardians of the dead shall be accorded whenever possible, reasonable and lawful,
- Respect for the scientific research value of skeletal, mummified and other human remains (including fossil hominids) shall be accorded when such value is demonstrated to exist,
- Agreement on the disposition of fossil, skeletal, mummified and other remains shall be reached by negotiation on the basis of mutual respect for the legitimate concerns of



communities for the proper disposition of their ancestors, as well as the legitimate concerns of science and education,

- The express recognition that the concerns of various ethnic groups, as well as those of science are legitimate and to be respected, will permit acceptable agreements to be reached and honoured.

12. Conclusions

A thorough background study and survey of the proposed development was conducted and findings were recorded in line with Amafa guidelines. As per the recommendations above, there are no major heritage reasons why the proposed development could not be allowed to proceed. Thus, it is recommended that the proposed development proceed on condition that the recommendation indicated above are adhered to.



Data bases

Chief Surveyor General;
Environmental Potential Atlas, Department of Environmental Affairs and Tourism;
Heritage Atlas Database, Pretoria;
Natal Museum Database;
National Archives of South Africa;
South African Heritage Resources Agency Database.

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APPENDIX 1: SITE SIGNIFICANCE

The following guidelines for determining site *significance* were developed by SAHRA in 2003. 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.

(a) 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 organization of importance in history?
- Does it have significance relating to the history of slavery?

(b) Aesthetic value

- Is it important in exhibiting particular aesthetic characteristics valued by a community or cultural group?

(c) 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?

(d) Social value

- Does it have strong or special association with a particular community or cultural group for social, cultural or spiritual reasons?

(e) Rarity

- Does it possess uncommon, rare or endangered aspects of natural or cultural heritage?

(f) Representivity

- Is it important in demonstrating the principal characteristics of a particular class



of natural or cultural places or objects?

- What is the 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?
- Is it important 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?



