



NSOVO ENVIRONMENTAL

**PHASE I ARCHAEOLOGICAL AND CULTURAL HERITAGE
SPECIALIST REPORT FOR THE PROPOSED CONSTRUCTION OF
132kV POWERLINE FROM BUTTERWORTH TO IDUTYWA
SUBSTATIONS IN MNQUMA AND MBASHE LOCAL
MUNICIPALITIES OF AMATHOLE DISTRICT MUNICIPALITY,
EASTERN CAPE PROVINCE.**

DECEMBER, 2022

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DECLARATION

ABILITY TO CONDUCT THE PROJECT

Alvord Nhundu is a professional archaeologist. He completed his Bachelor of Science with Honors degree in archaeology with the University of the Witwatersrand (Wits) and Masters in Archaeology with the University of Pretoria (UP). His research interest lies in old and new world archaeology, palaeoenvironmental and climatology, archaeological theory, Later Stone Age, rock art, hunter-gatherers, hunter-gatherer interactions, several aspects of southern African Iron Age and Indigenous archaeologies. Alvord is an accredited Cultural Resource Management (CRM) member of the Association of Southern African Professional Archaeologists (ASAPA #338) with Director Status in Stone Age and Iron Age archaeology and Field Supervisor status in Rock Art. He is also affiliated to Society of South Africanist Archaeologists (SAfA) and the International Council of Archaeozoology (ICAZ). He has been practising CRM for more than 10 years, and has completed over 100 Archaeological Impact Assessments (AIA) for developmental projects in the Limpopo, Mpumalanga, North-West, Eastern Cape, Free State and KwaZulu Natal provinces of South Africa. The projects include establishment and upgrade of power substations, road construction, and establishment and expansion of mines. He has also conducted the relocation of graves. His detailed CV is available on request.


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INDEPENDENCE

We, Alvord Nhundu and Munyadziwa Magoma declare that this report has been prepared independently of any influence as may be specified by all relevant departments, institutions and organizations. We act as the independent specialists in this application, and will perform the work relating to the application in an objective manner, even if this results in views and findings that are not favorable to the applicant. We declare that there are no circumstances that may compromise our objectivity in performing such work. We vow to comply with all relevant Acts, Regulations and applicable Legislation. Furthermore, Vhubvo Consultancy Cc, which is a company we represent in this application, is an independent service provider and apart from fair remuneration for services rendered, it has no financial interest or vested interest in the proposed project.

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EXECUTIVE SUMMARY

Introduction

Vhubvo Consultancy Cc was appointed by Nsovo Environmental Consulting to conduct an Archaeological and Cultural-Heritage Impact Assessment study for the proposed construction of a 132kV powerline from the Butterworth substation in Mnquma Local Municipality to Idutywa substation in Mbashe Local Municipality of Amathole District Municipality in Eastern Cape Province. The aim of the study was to outline the 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 and to advise on mitigation measures should any sites be affected. These mitigation measures will in turn assist the developer to make a decision on the most appropriate option (s) in line with the National Heritage Resource Act, 1999 (Act 25 of 1999). The findings of this cultural 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 area over the past years.

Background and Need of the Project

The proposed project intends to construct a 132kV power line from Butterworth substation in Mnquma Local Municipality to Idutywa substation located at Mbashe Local Municipality of Amathole District Municipality in the Eastern Cape Province. The powerline will be utilised to supply electricity to existing and future distribution substations. This will enable Eskom and Municipalities to meet the ever-growing demand of power in the country in general, and Amathole District in particular.

Methodology and Approach

The study method refers to the SAHRA Policy Guidelines for impact assessment, 2012. As part of this impact assessment; the following process were followed:

- Literature Review: To understand the background archaeology of the area, a background study was undertaken and relevant institutions were consulted. These studies entail review of archaeological and heritage impact assessment studies that have been conducted around the proposed area thorough SAHRIS. In addition, E-journal platforms such as J-stor, Google scholars and History Resource Centre were searched. The University of Pretoria's Library collection was also pursued;
- The field survey was conducted on the 23rd to the 24th of November 2022 by two archaeologists from Vhubvo. The survey was carried out following the proposed powerline route using a vehicle, and walking in some sections deemed to be suspicious of any cultural material.
- This was followed by report writing, as well as mapping and constructive recommendations.



The applicable maps, tables and figures, are included as stipulated in the NHRA (no 25 of 1999), the National Environmental Management Act (NEMA) (no 107 of 1998) and the Minerals and Petroleum Resources Development Act (MPRDA) (28 of 2002).

Impact statement

Noteworthy that the linear nature of the project area will cause minimal impact to the ground. Furthermore, tower positions can be moved to avoid direct impacts on heritage resources. It is important to note that all categories of heritage resources, with the possible exception of movable objects, are generally known to occur in the wider area of the proposed development. The primary areas of concern in this study are the impacts on archaeological sites and the landscape that is 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 beyond the scope of this report.

Restrictions and Assumptions

Some of the area proposed for development is encroached by bush which make it almost impossible to access. It is thus possible that some materials could have been overlooked due to the fact that the area was investigated only in a broad, overview approach as access to some areas was difficult. It is assumed that the Public Participation Process might also result in the identification of sites, features and objects, including sites of intangible heritage potential in the corridor and that these then will also have to be considered in the finalisation of pylon position.

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 Recommendations

The main aim of the survey was to evaluate potential heritage resources that would occur within the boundaries of the proposed area (s) as well as to determine if there is any hamartia that would prevent the proposed development from taking place in any of the proposed study area (s). The study area was investigated for sites of heritage significance that might be affected by the proposed construction. The only sign of sites of heritage potential were mostly graves, but these are a distant from the preferred alternative route. Archaeological sites dating to the Stone, Iron and Historical Age are known to occur in the wider region of study area. However, most of the known sites would only have an indirect impact. For example, power line crossing some distance



132kv Powerline from Butterworth to Idutywa

from the site, thereby having only a visual impact. Note should be taken that detailed information about the powerline is still in early stage, e.g., the exact position of the powerline/ 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:

- Two cemeteries on both ends of the powerline; that is at Butterworth and at Idutywa, however, these cemeteries are hundreds of metres away from the routes of the powerline, and are not impacted in any way.

There is also a high chance of finding archaeological sites and this will be difficult to avoid since most of these are trifling, and often hidden underground, only exposed once construction begins. Although no remains of Stone/ Iron Age sites were noted during site visit, the area could still contain sites. Taking all the above findings and discussions into account, it can be recommended that the proposed development can proceed. There are no major heritage flaws which can hamper the accomplishment of this project.

Considering that 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, we as independent archaeologists do recommend the following:

- ✚ A heritage practitioner should complete a “walk down” of the final powerline servitude, 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 route 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 SAHRA 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.



TABLE OF CONTENTS

EXECUTIVE SUMMARY.....	IV
ACRONYMS AND ABBREVIATIONS	IX
GLOSSARY OF TERMS.....	X
1. INTRODUCTION.....	1
1.1 NATURE OF THE PROPOSED PROJECT.....	1
2. SITES LOCATION AND DESCRIPTION.....	1
3. PURPOSE OF THE CULTURAL HERITAGE STUDY	6
4. METHODOLOGY AND APPROACH.....	6
5. APPLICABLE HERITAGE LEGISLATION	7
6. DISCUSSION OF (PRE-) HISTORY OF THE OF SOUTH AFRICA	8
7. DISCUSSION OF (PRE-) HISTORY OF THE AREA.....	9
8. DEGREE OF SIGNIFICANCE	11
9. FINDINGS AND DISCUSSIONS	13
9.1 IMPACT ASSESSMENT.....	14
10. RECOMMENDATIONS.....	14
11. CONCLUSIONS.....	15
APPENDIX 1: SITE SIGNIFICANCE	18



LIST OF FIGURES

Figure 1: An overview of the Google view of the area proposed for the development	1
Figure 2: View of the area proposed for the proposed development, note the existing powerline.....	1
Figure 3: View of the start point of the powerline at Butterworth.....	1
Figure 4 : Some of the households to benefit from the proposed development.	2
Figure 5: View of the area to be traversed by the powerline.....	2
Figure 6: Some of the sections of the site proposed for the development.....	3
Figure 7: View of the area proposed for the development.	3
Figure 8: View of some of the landscape to be traversed by the powerline towards Idutywa.	4
Figure 9: View of the area proposed for the development, note site disturbance.....	4
Figure 10: View of some farms to be traversed by the proposed powerline.....	5
Figure 11: View of some households that will benefit from the proposed development.	5



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
ECHRA	Eastern Cape Heritage Resources Authority
SAHRA	South African Heritage Resources Agency



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 artefacts, structures, and organic and environmental remains, as residues of past human activity.



1. Introduction

Vhubvo Consultancy was appointed by Nsovo Environmental Consulting to conduct an Archaeological and cultural heritage impact assessment study for the proposed construction of a 132kv powerline from the Butterworth substation at Mnyama Local Municipality to Idutywa substation at Mbashe Local Municipality of Amathole District Municipality in the Eastern Cape Province. The aim of the study was to outline the 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 construction and to advise mitigation should any be affected and these will in turn assist the developer to make a decision on the most appropriate option in line with the National Heritage Resource Act, 1999 (Act 25 of 1999).

The findings of this cultural 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 area over the past years.

1.1 Nature of the Proposed Project

The project forms part of the refurbishment strategy to rebuild the 132kV corridor between East London and Kokstad in the Cape Coastal Cluster since 2009. Currently, there is an existing 132kV line network between the Pembroke and Zimbane substations and it is in a poor condition. The powerlines are approximately 35 years old, therefore they have deteriorated over the years. The existing powerlines have several class 4 poles, broken and or cracked cross-arms, corroded hardware, and shield wire. Furthermore, these powerlines are built in a poor terrain which makes it difficult to conduct fault repairs. The life expectancy of these lines has been exceeded. Consequently, Eskom proposes the construction of the 132kv 40 km Butterworth-Idutywa powerline to replace the existing ones. Electrification has significant positive benefits from a socio-economic and ecological perspective. The provision of electricity leads to several social benefits for organs of state, individuals, industries, and communities since it enables development and encourages small and medium enterprise development, and as a result, contributes to a possible increase in disposable income. To encourage and enable all the identified benefits, the new reliable powerline must be built.

2. Sites Location and Description

The proposed 132kV powerline is located in Amathole District Municipality. The two substations are at Butterworth and Idutywa respectively. Butterworth falls under Mnyama Local Municipality, whilst Idutywa falls under the jurisdiction of Mbashe Local Municipality. The general landscape is undulating with open valleys on both ends. There are hills on both ends, and the hills are covered in dense grass, and patches of small, low shrubs. The drainage lines are covered by dense thicket vegetation. The larger part of the powerline route runs through a hilly landscape, crossing roads, and traverses through built up areas.



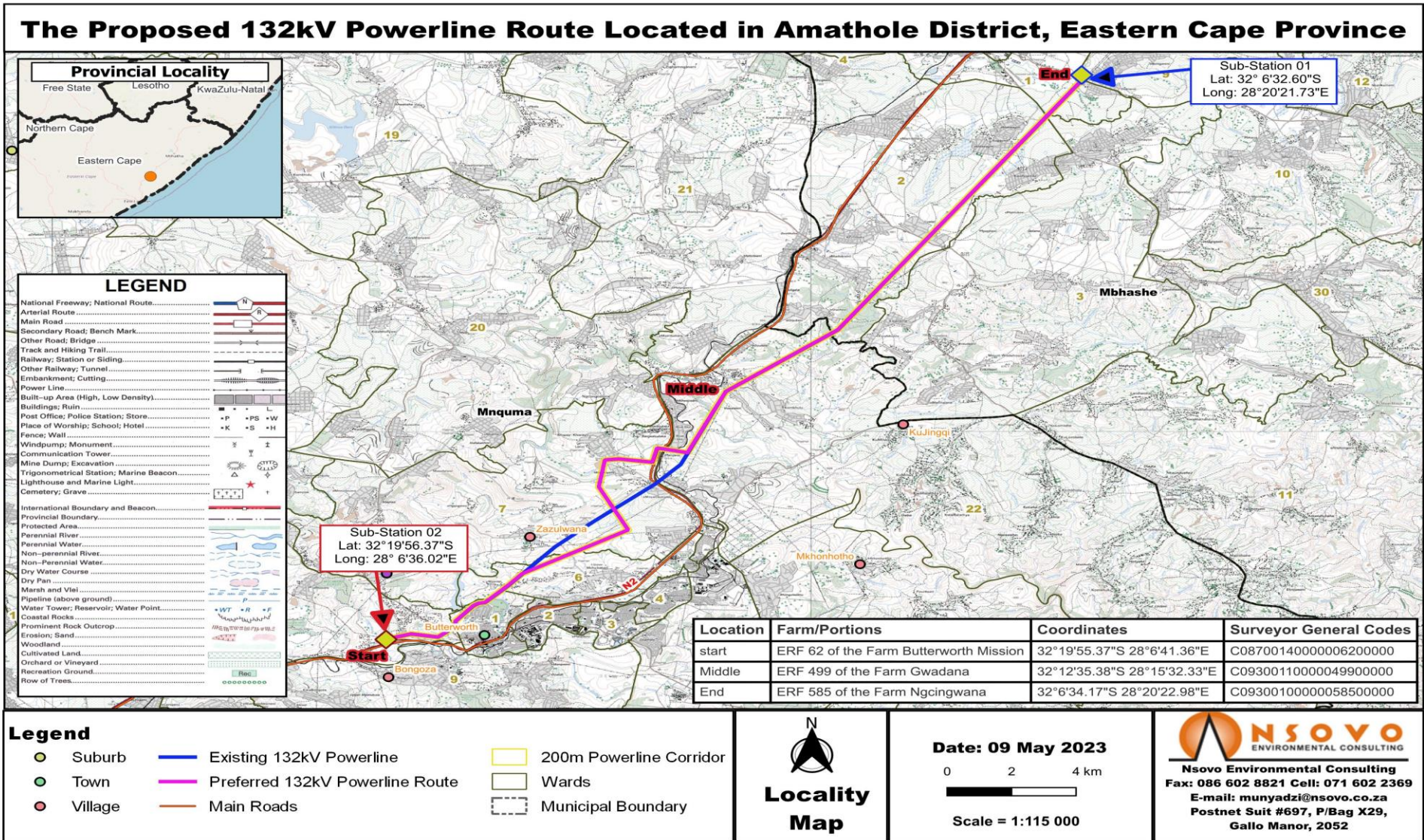


Figure 1: An overview of the Google view of the area proposed for the development (Courtesy Nsovo).





Figure 2: View of the area proposed for the proposed development, note the existing powerline.



Figure 3: View of the start point of the powerline at Butterworth.





Figure 4 : Some of the households to benefit from the proposed development.



Figure 5: View of the area to be traversed by the powerline.





Figure 6: Some of the sections of the site proposed for the development.



Figure 7: View of the area proposed for the development.





Figure 8: View of some of the landscape to be traversed by the powerline towards Idutywa.



Figure 9: View of the area proposed for the development, note site disturbance.





Figure 10: View of some farms to be traversed by the proposed powerline.



Figure 11: View of some households that will benefit from the proposed development.



3. 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 construction, 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 construction of a powerline (s) and substation; and
- 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.

4. Methodology and Approach

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; and
- 4) Analysis of the acquired data, leading to the production of this report.

Physical survey

The field survey was conducted on the 23rd to the 24th of November 2022 by two archaeologists from Vhubvo. The survey was done on both foot and vehicle, focusing more on areas that looked like they can contain some heritage resources. The survey was carried out from Butterworth substation to Idutywa substation where the proposed powerline ends.

Documentation

The general project area was documented and this 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.

Restrictions and Assumptions

Although most of the powerline route was accessible, the archaeological visibility was poor due to the dense green vegetation. The undulating nature of the environment also means there are high rates of sheet erosion which makes it difficult to find cultural objects. Despite the limitations, the knowledge and experiences gained from the background study of the wider area study were useful.



5. 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 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).*



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.

6. Discussion of (Pre-) History of the of South Africa

South Africa has one of the longest sequences of human development in the world. The prehistory and history of South Africa span the entire known life span of human on earth. It is thus difficult to determine exactly where to begin, a possible choice could be the development of genus *Homo* millions of years ago. South African scientists have been actively involved in the study of human origins since 1925 when Raymond Dart identified the Taung child as an infant halfway between apes and humans. Dart called the remains *Australopithecus africanus*, southern ape-man, and his work ultimately changed the focus of human evolution from Europe and Asia to Africa, and it is now widely accepted that humankind originated in Africa (Robbins *et al.* 1998). In many ways this discovery marked the birth of palaeoanthropology as a discipline. Nonetheless, the earliest form of culture known in South Africa is the Stone Age. These prehistoric period during which humans widely used stone for tool-making, stone tools were made from a variety of different sorts of stone. For example, flint and chert were shaped for use as cutting tools and weapons, while basalt and sandstone were used for ground stone. Stone Age can be divided into Early, Middle and Late; it is argued that there are two transitional period. Noteworthy that the time frame used for Stone Age period is an approximate and differ from researcher to researcher (see Korsman and Meyer 1999, Mitchell 2002, Robbins *et al.* 1998).

Stone Age

Although a long history of research on the Early Stone Age period of southern Africa has been conducted (Mason 1962, Sampson 1974, Klein 2000, Chazan 2003), it still remains a period were little is known about. These may be due to many factors which includes, though not limited to retrieval techniques used, reliance on secondary, at times unknown sources, and the fact that few fauna from this period has been analysed (Chazan 2003). According to Robbins *et al.* (1998) the Stone Age is the period in human history when stone was mainly used to produce tools. This period began approximately 2.5 million years ago and ended around 200 000 years ago. During this period human beings became the creators of culture and was basically hunters and gatherers, large stone artefacts identify this era.



The Middle Stone Age overlap with the EIA and possibly began around 100 000 to about 200 000 years ago and extends up to around 35 000 years ago. Smaller tools than in ESA mark this period. MSA people made a wide range of stone tools from both coarse – and fine-grained rock types. Sometimes the rocks used for tools were transported considerable distances, presumably in bags or other containers; as such tool assemblages from some MSA sites tend to lack some of the preliminary cores and contain predominantly finished products like flakes and retouched pieces. Microlithic Later Stone Age period began around 35 000 and extend to the later 1800 AD. According to Deacon (1984), LSA is a period when human being refined small blade tools, conversely abandoning the prepared-core technique. Thus, refined artefacts such as convex-edge scrapers, borers and segments are associated with this period. Moreover, large quantity of art and ornaments were made during this period. This area is home to all three known phases of the Stone Age. Early to Middle Stone Age sites are uncommon in this area, however rock-art sites and Late Stone Age sites are much better known.

Iron Age

The Iron Age is the name given to the period of human history when metal was mainly used to produce artefacts. Recently, they have been a debate about the use of the name. Other archaeologist has argued that the word “Iron Age” is problematic and does not precisely explain the event of what happened in southern Africa, as such, the word farming communities has been proposed (Segobye 1998). Nonetheless, in South Africa this period can be divided into two phases. Early (200 - 1000 A.D) and Late Iron Age (1000 - 1850 A.D). Huffman (2007) has indicated that a Middle Iron Age (900 - 1300 A.D) should be included. According to Huffman (2007:361), until the 1960s and 1970s most archaeologists had not yet recognised a Middle Iron age. Instead, they began the Late Iron Age at AD 1000. The Middle Iron Age (AD 900–1300) is characterised by extensive trade between the Limpopo Confluence and the East Coast of Africa. This has been debated, with other researchers, arguing that the period should be restricted to Shashe-Limpopo Confluence.

7. Discussion of (Pre-) History of the Area

The Eastern Cape Province has a rich archaeological record. The archaeology of the province can be divided into the Stone Age, Iron Age and Historical timeframes

Stone Age

Although there is limited research in the Stone Age of the region, information from archival records and Cultural Resource Management reports indicate that the region has an interesting and complex archaeological past. Early Stone Age Acheulian handaxes and clevers dating to approximately 1,5 million years ago were found mainly in inland areas such as the on the slopes of Tyume River and areas around the Fort Hare University. Early Stone Age tools have also been found in areas like Alice, Middeldrift, Kentani, Butterworth, Idutywa and Lusikisiki. At Fort Hare, during a mitigation and rescue excavation in 1974, a large assemblage of stone tools was found at Middeldrift (Binneman 2019). Middle Stone Age tools dating to between 250 000 and 30 000 years before present have also been found throughout the region. However, the fact that these are



not associated with any archaeological material render them less significant. Later Stone Age sites dating to 20 000 years ago have also been found scattered in the region. Derricot (1977) excavated several mounds at Middledrift and Ann Shaw, and he termed the stone tool tradition he found there at the bottom layers, Middledrift. The origins of the mounds is not clear, but is thought to be products of Pastoralist groups based on the evidence of thin, fine, mainly undecorated potsherds, a Khoisan burial and complete cow burials found in these mounds. The LSA of the region is also characterised by the presence of shell middens, and these have been found mainly concentrated opposite rocky coasts. These are believed to have been campsites for the San, Khoisan and Bantu speakers who lived along the immediate coast and collected marine food. Found in association with these shell middens have been food remains, cultural material in form of thin, undecorated pottery and even human remains dating to 8 thousand years ago.

Iron Age

There is no record of Iron Age settlements in the study area. Basing on Maggs's 1973 model, it is possible that they can be found in the area. Evidence in the form of thick well decorated pottery have been found along the coast (Rudner 1968). The study area is about 113 km from East London where a site excavated yielded some Iron Age material culture (Nongwaza 1994). Research in the Great Kei Valley indicates that Agropastoralists were already occupying some parts of the Eastern Cape by between AD600 and 700 (Binneman 1994). Just like the picture in southern Africa, the LIA people left the river valleys to settle on hill tops. More evidence of Iron Age was found at Middledrift and Ann Shaw. The LIA settlements yielded grain pits, and ash heaps. The grain pits were believed to belong to the Nguni culture; jar-shaped with a small opening. The floor was lined with stones and sealed with layer of *dhaka* (Binneman 1994).

Historical era

The study area has a rich historical era. Early European travelers such as Beutler found the Goanqua Khoi in 1752 already living there. Lord Sommerset declared the Tyumie- Keiskamma Rivers as the colonial boundary with the Xhosa in 1819.

Brief History of the Two Towns

Buttwerworth

The town is situated 113km from East London on the National Road between Durban and Cape Town (www.wikipedia.org). It developed from a station of the Wesleyan Missionary Society established in 1827 by Shrewsbury (Raper 2014). The town took its name from Joseph Butterworth who was the treasurer of the society (Raper 2014; www.wikipedia.org). The mission was burnt down three times during the Cape Frontier Wars. The town developed as a transportation hub due to its proximity to George Town (www.wikipedia.org). It was founded in 1880, and gained municipal status in 1904 (Raper 2014).

Idutywa



It is a town in the Mbashe Local Municipality and is located 132km north-east of East London and 29km north-west of Willowvale (www.wikipedia.org). It is named after the tributary of the Mbashe River, the Dutywa (www.wikipedia.org). The town was founded in 1858 as a military fort after a dispute between a Natal colony party and its local people. The origin of the name is from Xhosa, *ukuduba* ‘to disturb’, passive voice *ukudutywa*, thus the disturbed or the disorder one which is said to be referring to the confusion, scattering, troublesome time of Mfecane perpetrated by the Zulus in the 1820s (Raper 2014).

8. Degree of Significance

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 1: 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	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.

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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 (ECHRA) 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 2: 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.



9. Findings and Discussions

The main aim of the survey was to evaluate potential heritage resources that would occur within the boundaries of the proposed area (s) as well as to determine if there is any hamartia that would prevent the proposed development from taking place in any of the proposed study area (s). 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 amongst others infrastructure elements such as major and access roads. 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 /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:

- Iron Age people preferred to settle on the alluvial soils close to rivers. Part of the corridor cut across rivers, as well as other tributaries which are known for vast of archaeological resources. River banks irrespective of extent are viewed to be sensitive and should be cautioned in the best way possible.

The study area was investigated for sites of heritage significance that might be affected by the proposed construction. The only sign of sites of heritage potential were mostly graves, but these are a distant from the preferred alternative route. Archaeological sites dating to the Stone, Iron and Historical Age are known to occur in the wider region of study area. However, 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. Note should be taken that detailed information about the powerline is still in early stage, e.g., the exact position of the powerline/ 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:

- Two cemeteries on both ends of the powerline; that is at Butterworth and at Idutywa, however, these cemeteries are hundreds of metres away from the routes of the powerline, and are not impacted in any way.

There is also a high chance of finding archaeological sites and this will be difficult to avoid since most of these are trifling, and often hidden underground, only exposed once construction begins. Although no remains of Stone/ Iron Age sites were noted during site visit, the area could still contain sites. Taking all the above findings and discussions into account, it can be recommended that the proposed development can proceed. There are no major heritage flaws which can hamper the accomplishment of this project.



9.1 Impact Assessment

Below is a description of the related impact ratings. These ratings are for archaeological and cultural heritage that may occur in the study area.

Powerline

The powerline stretches on farming land and section of the mountainous area and cut across some rivers. These areas are ideal for isolated archaeological materials known to spread across the area. This corridor also transverse over active subsistence agricultural fields and villages. Farmers and villagers in these areas are known to bury their loved ones in their place of dwelling. Making this an ideal place for finding either known or unknown burial. The anticipated rating is given in Table 4 below:

Table 4: Anticipated impact rating

Powerline	Ratings
Topographical Extent	The impact will only affect site
Duration	Long term
Magnitude	Medium
Probability	Possible
Reversibility	Irreversible
Irreplaceable Loss	The impact may result in significant loss

10. Recommendations

Considering that 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, we, as independent specialists due recommend the following:

- ✚ A heritage practitioner should complete a “walk down” of the final powerline servitude, 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 route and thereby to avoid as many impacts to heritage as possible.

Pre-construction education and awareness training

Prior to construction, contractors should be given training on how to identify and protect archaeological remains that may be discovered during the project. The pre-construction training should include some limited site recognition training for the types of archaeological sites that may occur in the construction areas.

Below are some of the indicators of archaeological site that may be found during construction:

- Flaked stone tools, bone tools and loose pieces of flaked stone;



- Ash and charcoal;
- Bones and shell fragments;
- Artefacts (e.g., beads or hearths);
- Packed stones which might be uncounted underground, and might indicate a grave or collapse stone walling.

In the event that any of the above are unearthed, all construction within a radius of at least 10m of such indicator should cease and the area be demarcated by a danger tape. Accordingly, a professional archaeologist or SAHRA officer should be contacted immediately. In the meantime, it is the responsibility of the contractor to protect the site from publicity (i.e., media) until a mutual agreement is reached. Noteworthy that any measures to cover up the suspected archaeological material or to collect any resources is illegal and punishable by law. In the same manner, no person may exhume or collect such remains, whether of recent origin or not, without the endorsement by SAHRA.

11. Conclusions

A thorough background study and survey of the proposed development was conducted and findings were recorded in line with SAHRA 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 above recommendations are adhered to.



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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?



