



Nsovo Environmental Consulting

PHASE I ARCHAEOLOGICAL AND CULTURAL HERITAGE IMPACT ASSESSMENT SPECIALIST REPORT FOR THE PROPOSED UPGRADE OF THE TRANSNET HELIPAD INFRASTRUCTURE AND ASSOCIATED ACTIVITIES AT THE PORT RICHARDS BAY WITHIN THE CITY OF UMHLATHUZE UNDER KING CETSHWAYO DISTRICT MUNICIPALITY IN KWAZULU NATAL.

March 2022

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DECLARATION



ABILITY TO CONDUCT THE PROJECT

Munyadziwa Magoma is a professional archaeologist, having obtained his BA degree in Archaeology and Anthropology at the University of South Africa (UNISA), and an Honours degree at the University of Venda (UNIVEN), and a Master's degree at the University of Pretoria (UP). He is an accredited Cultural Resource Management (CRM) member of the Association for southern African Professional Archaeologists (ASAPA) and Amafa aKwaZulu-Natali. Munyadziwa is further affiliated with the South African Archaeological Society (SAAS), the Society of Africanist Archaeologists (SAfA), Historical Association of South Africa (HESA); Anthropology Southern Africa (ASA); International Association for Impact Assessment (IAIASa); International Council on Monuments and Sites (ICOMOS) and the International Council of Archaeozoology (ICAZ). He has more than fifteen years of experience in heritage management, having worked for different CRM organisations and government heritage authorities. As a CRM specialist, Munyadziwa has completed well over 1000 hundred Archaeological Impact Assessments (AIA) for developmental projects situated in several provinces of the Republic of South Africa. The AIAs projects he has been involved with are diverse and include the establishment of the major substations, upgrades and establishment of roads, establishment and extension of mines. In addition, he has also conducted Heritage Impact Assessments (HIAs) for the alteration to heritage buildings and the relocation of graves. His detailed CV is available on request.

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We declare that this report has been prepared independently of any influence as may be specified by all relevant departments, institutions and organization. We act as the independent specialist in this application and will perform the work relating to the application objectively even if this results in views and findings that are not favourable to the applicant. We declare that there are no circumstances that may compromise my objectivity in performing such work, we vow to comply with all relevant Acts, Regulations, and applicable legislation.

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EXECUTIVE SUMMARY

Introduction

Vhubvo Consultancy Cc (Vhubvo) has been appointed by Nsovo Environmental Consulting to conduct an Archaeological and Cultural-Heritage Impact Assessment study for the proposed upgrade of the Helipad infrastructure and associated activities at the Port of Richards Bay, KwaZulu Natal Province. This assessment is a specialist component that forms part of Environmental Management. The main aim of the study is 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. Further, the study aims to advise on mitigation measures should any sites be impacted, these mitigations will, in turn, assist the developer in deciding on the most appropriate option (s) in line with the National Heritage Resource Act, 1999 (Act 25 of 1999). The desktop study was undertaken through the South African Heritage Resources Information System (for previous Archaeological Impact Assessments conducted in the region of the proposed development, and also for research that has been carried out in the wider area over recent years. The larger City of uMhlatuze is rich in heritage resources. There are approximately a hundred and twenty-five archaeological heritage sites recorded in the wider area. These sites depict evidence of archaeological resources belonging to the Stone Age, Iron Age, and Historical Period. The Stone Age is the period in human history when stone materials were used to produce tools. In South Africa the Stone Age can be divided into three periods, Early (More than 2 million years ago - 250 000 years ago), Middle (250 000 years ago – 25 000 years ago), and Late (25 000 years ago - AD 200). It is, however, important to note that dates only provide a broad framework for interpretation. This area is home to three known phases of the Stone Age. The Iron Age is the name given to the period of human history when metal was mainly used to produce artifacts. In South Africa, it can be divided into two separate phases. Early (AD 400 - AD 1025) and Late (AD 1025 - AD 1830). Although there are no known Early Iron Age sites in the area, there are several Late Iron Age sites in the wider area (Bergh 1999: 7 - 8).

Background and Need of the Project

The project development is located at the Port of Richards Bay, KwaZulu Natal. This project intends to upgrade the Helipad infrastructure and associated infrastructure. The development will comprise of the proposed key features:

- Apron;
- Hangar;
- Helipad;
- Storage space;
- Workshop;
- Above-ground diesel storage;



- Offices; and
- Sleeping bunkers.

Methodology and Approach

The study method refers to the SAHRA Policy Guidelines for impact assessment, 2012. As part of this impact assessment; the following processes 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 the view 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 29 of March 2022;
- The final step involved the recording and documentation of relevant archaeological resources, as well as the assessment of resources in terms of the heritage impact assessment criteria and report writing, as well as mapping and useful 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

The impact of the proposed development on archaeological and cultural heritage remains is rated as being low. The probability of locating any important archaeological remains dating to the Stone or Iron Age during the construction of the project is rated as low.

Restrictions and Assumptions

As with any survey, archaeological materials may be under the surface and therefore unidentifiable to the surveyor until they are exposed once construction resume. As a result, if any archaeological/ or gravesite is observed during construction, a heritage specialist must be notified immediately.

Survey Findings and Discussions

The main aim of the survey was to evaluate potential heritage resources that may be found within the area of the proposed development, as well as to determine if there is any hamartia that may prevent the proposed upgrade of the Helipad and associated infrastructure. Phase 1 Archaeological and Cultural Heritage Impact Assessment for the proposed upgrade identified no significant cultural or archaeological impacts envisaged on the footprint of the proposed area. Though there are no significant archaeological materials identified on the footprint of the proposed site; several structures scarred across the proposed area where noted. These



structures are however of low significance since they are less than 60 years old and does not possess any social or aesthetic value.

Recommendations and Discussions

Although no archaeological objects were observed during the survey, the client is reminded that these often happen underground, as such should any archaeological material be unearthed accidentally during the course of construction (e. g. excavation), KwaZulu-Natal Amafa and Research Institute should be alerted immediately and construction activities be stopped within a radius of at least 10m of such indicator. The area should then be demarcated by a danger tape. Accordingly, a professional archaeologist or KwaZulu-Natal Amafa and Research Institute officer should be contacted immediately. In the meantime, it is the responsibility of the Environmental Officer and the contractor to protect the site from publicity (i.e., media) until a mutual agreement is reached between the client and the consultant. It is mandatory to report any incident of human remains encountered to the South African Police Services, KwaZulu-Natal Amafa, and Research Institute staff members and professional archaeologists. Any measure to cover up the suspected archaeological material or to collect any resources is illegal and punishable by law under Section 35(4) and 36(3) of the National Heritage Resources Act, Act 25 of 1999. The developer must induct field workers about archaeology, and steps that should be taken in the case of exposing archaeological materials.

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 preconstruction 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 an 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); and
- ✚ Packed stones that might be uncounted underground and might indicate a grave or collapse stone walling.

Conclusions

A thorough background study and survey of the proposed development was conducted and findings were recorded in line with SAHRA and KwaZulu-Natal Amafa and Research Institute guidelines. It is recommended that the developer proceeds with the project subject to the recommendations given above.



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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
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. These include intangible resources such as 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 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



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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.



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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).



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



1. Introduction and Rationale

Vhubvo Consultancy Cc (Vhubvo) has been appointed by Nsovo Environmental Consulting to conduct an Archaeological and cultural heritage impact assessment study for the proposed upgrade of the Transnet Helipad infrastructure and associated activities. The project is located at the Port of Richards Bay within the City of uMhlatuze under King Cetshwayo District Municipality, KwaZulu Natal. The study aims to outline the cultural resources, sites associated with oral histories, graves, cultural landscapes, and any structure of historical significance that may be affected by the proposed resettlement of affected people, and to advise on mitigation should any heritage resource be affected as a result. These will in turn assist the developer in deciding on the most appropriate option in line with the National Heritage Resource Act and the KwaZulu-Natal Heritage Act. 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 research that have been carried out in the area over the past years.

The Historical period of the area mainly deals with the colonial settlement and its impacts on southern Africa. In South Africa, this period is associated with Dutch settlement in the Western Cape, early missionary stations, Voortrekker routes, the Anglo-Boer War and the Battle of the Blood River. The Greater Zululand was christened Natal by the Portuguese explorer Vasco da Gama in 1497. The colonial history of KZN starts around 1820 when early English ivory traders established themselves at Port Natal (Durban), at a time when Shaka king of the Zulu was firmly in charge of the area. It is argued that the kingdom he established remained the most powerful in the region throughout the 19th century (Wright & Hamilton 1989). Shaka's majesty rule came to an end in 1828 when he was assassinated by his half-brothers Dingane and Mhlangana, with Dingane eventually taking over the kingship (Wright & Hamilton 1989). In 1837 Piet Retief led the Dutch descendants, the voortrekkers into Natal (Stapleton 2017). Interestingly the old wagon road which they used in 1838 when they were trooping down the slopes of the Drakensberg mountains into Pietermaritzburg can still be seen today (Oberholser 1972). After a series of battles between the two groups, the Zulus were defeated at the Battle of the Blood River in 1838, and the Boers established a short-lived republic called Natalie. In 1845 the Boer Republic of Natalie was annexed by the British. Northern and central parts of the province are strewn with sites of battles between the Zulus, Boers, and the British between the 1800 and 1900s. In 1879 the British finally conquered the Zulu in the Anglo-Zulu war and acquired the area north of the Tugela River, the lands to the north of the Buffalo River were added in 1902 (Wright & Hamilton 1989). During the



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Anglo-Zulu war, the commodore of the Cape, Sir Fredrick Richards used the area around Richards Bay as a harbor (Wahl & van Schalkwyk 2013). Richards Bay which had started as a small fishing village was proclaimed a town in 1969 (Wahl & van Schalkwyk 2013).

2. Sites Location and Description

The proposed upgrade of the Helipad infrastructure and associated activities is located within the Port of Richards Bay in the City of uMhlathuze under King Cetshwayo District Municipality in KwaZulu Natal Province. It is situated on the north coast of the province and buffered by the Indian Ocean in the southwest side of the site. The area proposed for the upgrade of the Helipad and Associated Infrastructure is already developed, defined by the fenced property, mowed lawn, and some scattered trees. The landscape is generally described as a low-relief area that is bounded by shoreline and high-relieve topography on the inland side.

Summary of the Project location Details

Province:	KwaZulu Natal
District:	King Cetshwayo
Local:	City of uMhlathuze
Town Names:	Richards Bay
Proposed development:	Upgrade of the Helipad infrastructure and associated activities

Figure 1: Locality map of the area proposed for the development (Nsovo 2022).



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Figure 2: An overview of the eastern section of the area proposed for upgrade.



Figure 3: View of the existing helipad proposed for upgrade.



Figure 4: View of the north-western section of the area proposed for upgrade.



Figure 5: View of the northern section of the area proposed for upgrade.





Figure 6: View of structures noted in the area proposed for upgrade.

3. Nature of the Proposed Project

The project development is located at the Port of Richards Bay, KwaZulu Natal. This project intends to upgrade the Helipad infrastructure and associated activities. The development will comprise of the proposed key features:

- Apron;
- Hangar;
- Helipad;
- Storage space;
- Workshop;
- Above-ground diesel storage;
- Offices; and
- Sleeping bunkers.

4. Purpose of the Cultural Heritage Study

The purpose of this Archaeological and Cultural Heritage study is 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 upgrade of the Helipad 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). 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 may be affected by the proposed development;
- 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 community members;
- 3) Completion of a field survey; and
- 4) Documentations and analysis of the acquired data, leading to the production of this report.

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 literature were used to screen the proposed area and to understand the baseline of heritage sensitivities.

5.1.2 Oral interview

Oral interview was initiated with local.

5.1.3 Physical survey

The field survey was undertaken on 29th of March 2022. An archaeologist from Vhubvo conducted the survey.

5.1.4 Documentation



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The general project area was documented. This documentation included taking photographs using cameras a 14.1 mega-pixel Sony Cybershort Digital Camera. Plotting of finds was done by a Garmin etrex Venture HC.

5.2 Restrictions and Assumptions

As with any survey, archaeological materials may be under the surface and therefore unidentifiable to the surveyor until they are exposed once construction resume. As a result, if any archaeological/ or gravesite is observed during construction, a heritage specialist must be notified immediately.

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 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*



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- (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)*
- (b) *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.*

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

South Africa possesses a rich archaeological record. It has one of the longest sequences of human development in the world. South African scientists have been actively involved in the search of human origins since 1925 when Raymond Dart identified the *Taung* child as an infant halfway between apes and humans. Dart named the remains *Australopithecus Africanus*, southern ape-man, and his work fundamentally changed the focus of human evolution from Europe and Asia to Africa, and it is now widely accepted that humanity originated from Africa, hence reference to Africa as the “cradle of humanity” (Robins *et al.*1998). In many ways, Dart’s discovery marked the birth of palaeoanthropology as a discipline. The archaeology of South Africa which fits well into the southern African periodisation is broadly divided into Stone Age, Iron Age, and the Historical Period.



Stone Age

The Stone Age is the pre-historic period when humans widely used stone for tool making (Robins *et al.* 1998). As the early ancestors progressed physically, mentally and socially they developed stone tools. These tools are the earliest evidence for culture in southern Africa (Clark & Kuman 2000). The Stone Age began approximately 2.6 million years ago and ended around 20 000 years ago. It is divided into three phases namely the Early Stone Age, Middle Stone Age, and Later Stone Age. It is argued that there are two transitional periods. Noteworthy that the time used for the Stone Age is approximate and it differs from one researcher to another (See Robins *et al.* 1998; Korsman & Mayor 1999; Mitchell 2002).

Early Stone Age (ESA)

The Early Stone Age is dominated by two industries; the Oldowan and Acheulian. The Oldowan industry which was the earliest was developed by the earliest members of the genus Homo, such as Homo habilis around 2.6 million years ago. The Oldowan tools which are only found in Africa, and not anywhere else are mainly simple flakes which were struck from cobbles. The assemblage comprises tools such as cobble cores and pebble choppers. They were not task-specific tools, and one tool could be used for many functions (Wurz 2000). The Oldowan industry was completely replaced by the Acheulian around 1.7 million years ago. Homo ergaster was probably responsible for the manufacture of Acheulian tools in South Africa. Acheulian tools were longer with sharper edges which suggest they could be used for a variety of activities ranging from the butchering of animals, chopping wood, digging roots, and cracking bones for marrow. The most diagnostic tools of this period are the handaxes and the cleaver. In South Africa, Oldowan tools have been found at Sterkfontein (Brian 1985), and Kroomdrai Clark (1993). Wonderwerk Cave (Chazan *et al.* 2008). Sites that have yielded Acheulian tools in South Africa are Swartkraans, Kroomdrai, and Sterkfontein.

Middle Stone Age (MSA)

The Middle Stone Age artefacts started appearing about 250 000 years ago and these replaced the larger handaxes and cleavers. In contrast to the ESA technique of removing flakes from a core, MSA tools were flakes to start with. There were of a predetermined size and shape and were made by preparing a core of suitable material and striking off the flake so that it was flaked according to a shape which the toolmaker desired. MSA people made a range of tools from both coarse and fine-grained rock types, sometimes rocks used for tool making were transported considerable distances, probably in bags or containers, as such tool assemblages from some MSA sites tend to



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lack some of the preliminary cores and contain predominantly finished products like flakes and retouched pieces. The stone toolkit of this period is dominated by elongated, parallel-sided blades as well as triangular flakes. Many MSA sites have evidence of control of fire, prior to this, rock shelters and caves would have been dangerous for human occupation due to predators (Deacon & Deacon 1999). Besides the introduction of fire, the widespread use of red ochre, probably as body paint, also shows that MSA behavior had become more human. The recent finds of decorated ochre at Blombos and decorated ostrich egg shells at Diepkloof also in the Cape further cements the point. Other sites that have yielded MSA tools in South Africa are Klassies River Mouth, Blombos and Border Cave (Deacon & Deacon 1999).

Later Stone Age (LSA)

The Later Stone Age ranges from 20 000 to 2000 years ago. It is important to note that the transition from MSA to LSA did not occur simultaneously in southern Africa. It is described by Deacon (1984) as a period when man refined small blade tools conversely abandoning the MSA prepared-core technique. Anatomically speaking, as the brain gets bigger, tools became smaller and more efficient. Thus, refined artefacts such as thumbnails, convex-edge scrapers, crescents, and bladelets are associated with this period. Other tools of the period are hammers, adzes, bores, grooved stones, hafted tools, and points. The period also saw the introduction of poisoned arrows to enhance the effectiveness of bone points and this led to improved hunting (Walker & Thorp 1997). Faunal evidence suggests that LSA hunter-gatherers trapped and hunted zebras, impala, warthog, and bovids of various sizes. They also diversified their protein diet by gathering tortoises, marine resources, and land snails (*Achatina*) in large quantities. In addition to bow-hunting and marine sources collection, human behaviour was recognisably modern in many ways; uniquely traits such as rock art and purposefully burial with ornaments were common practices (Villa *et al.*2012). Rock art in form of paintings and engravings is an important signature of this period. Examples of LSA sites in South Africa are Cottage Cave, and Nelson Bay Cave.

Iron Age

Iron Age is a period in human history when metal was mainly used to produce tools. The period marks the movement of farming communities into South Africa in the first millennium AD, or 2500 years ago (Mitchell 2002:259). The people were agro-pastoralists that settled in the vicinity of water. In terms of material culture, pottery is a dominant and critical component of an Iron Age assemblage. Iron Age archaeologists use pottery to identify the presence and chronology of different cultural groups on sites. Through the study of stylistic traditions related to vessel shape



and decoration, the movement, interaction, and lineage of cultural groups can be traced (Huffman 1989). Pottery seriation in conjunction with linguistic data has been used by researchers to trace the origin of these people who brought the Iron Age culture. Researchers have traced the origin of the Bantu people with their agro pastoral to what is now the border of Nigeria and Cameroon. These people migrated eastward and southward breaking into two groups. According to Huffman (2007) there were two streams of Early Iron Age expansion in southern Africa, one referred to as the Urewe-Kwale tradition (or the eastern stream) and another one called the Kalundu tradition (or the western stream). Refer to figure 2 below:

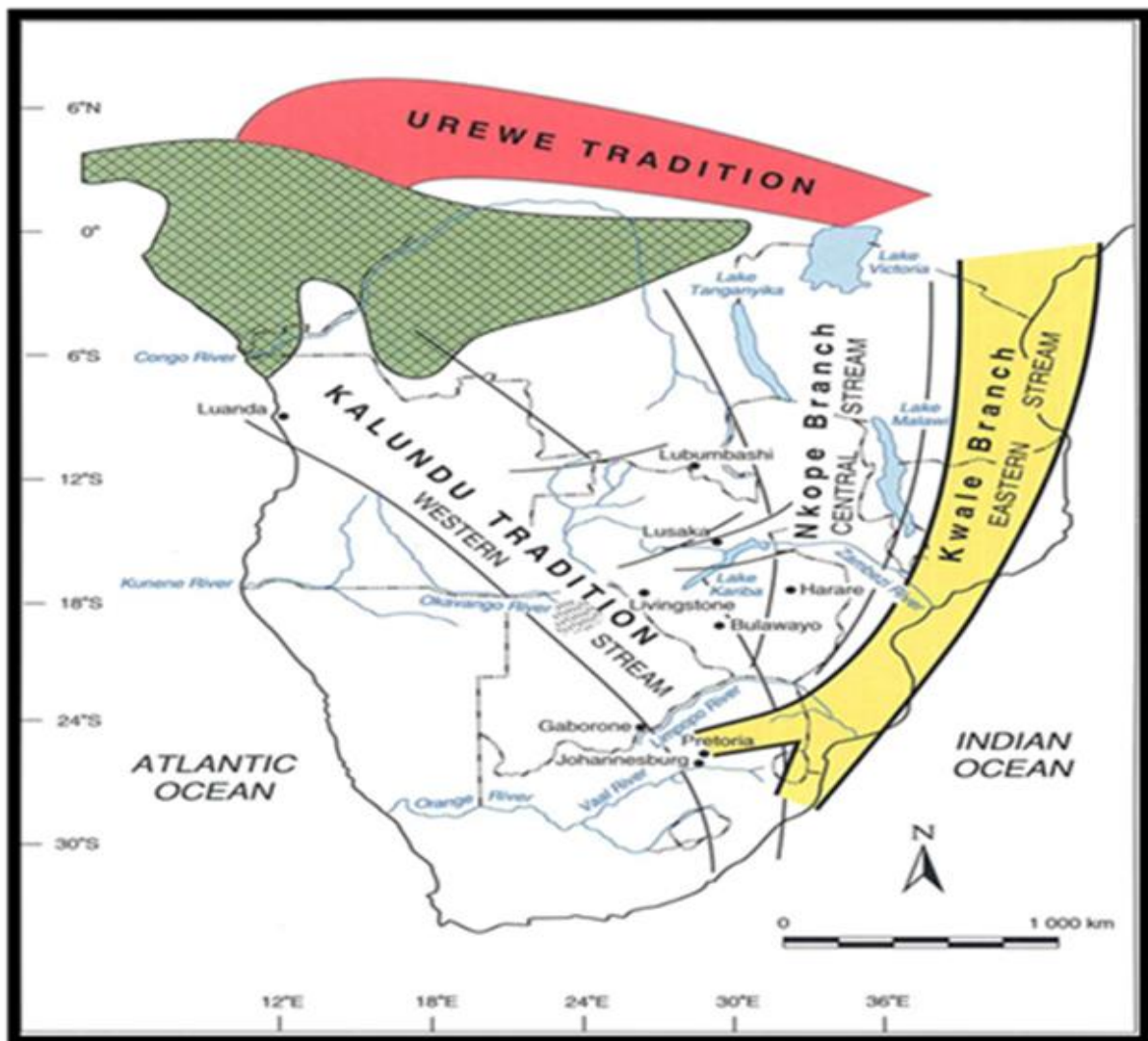


Figure 7: View of the spread of EIA movements.

Early Iron Age (EIA)

Early Iron Age dwellings were built in low-lying areas, such as river valleys and the coastal plain, where forests and savannas facilitated shifting (slash and burn), they also cultivated grains such as cow peas, ground beans, sorghum and millets (Mitchell 2002). Early Iron Age pottery is



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characterised by large and prominent inverted rims, large neck areas and fine elaborate decorations. Unlike the broad and flat surface grinding stones of Late Iron Age, the Early Iron Age grinding stones are deeper and more lenticular grooves. Well-known EIA sites in South Africa include Happy Rest in the Limpopo Province, Lydenburg Heads in Mpumalanga, Broederstroom in North West, and Mzonjani in KwaZulu-Natal Province.

Middle Iron Age (MLA)

The Middle Iron Age stretches from AD900 to 1300 and marks the origins of the Zimbabwe culture. It is marked by a change in emphasis from grain cultivation to cattle herding, however, the importance of cattle cut across all the three ages of the Iron Age period (Huffman 2007). In South Africa a clear shift from the EIA to the MIA is apparent in the Shashe-Limpopo basin where it marks the origins of the Zimbabwe culture where it came with class distinction and sacred leadership (Huffman 2005, 2007). Middle Iron Age sites in the Shashe-Limpopo basin are Schroda, K2 and Mapungubwe.

Late Iron Age (LIA)

The Late Iron Age dates from AD1300 to 1840. Greater focus on economic growth and the increased importance of trade marks the beginning of the LIA. Specialisation in terms of natural resource exploitation and utilisation are a characteristic feature of this period. Iron slags tend to occur only in certain localities compared to earlier times. Also, Later Iron Age settlements were no longer located in river valleys but were built on higher ground where homestead which in most instances were made of stone for building purposes would benefit from cooling breezes and good views most probably for strategic purposes. Pottery styles also underwent significant changes; maize was also introduced during this period (Maggs 1980). Well-known Late Iron Age sites in South Africa are Badfontein in Mpumalanga, Thulamela in Limpopo (Huffman 2007).

Historical Period

The Historical period dates from 1600. It deals with the infiltration, settlement, spread and domineering of European influence in southern Africa. Its segments are; Dutch settlement in the Western Cape, the troubled times of Zululand (*mfeqane/ difaqane*), Voortrekkers, early missions, and the diamond rush. This period also witnessed or saw the compilation of early maps by missionaries, explorers and military personnel.



Bartolomeo Dias was the first European to sail around the southern point of Africa in 1486, he named it “The Cape of Good Hope”, nine years later it was Vasco da Gama, however, these Portuguese seafarers were not seriously interested in southern Africa. Nevertheless, the history of southeast part will change forever on the 6th of April 1652. This is when the Dutch seafarer Jan van Riebeeck arrived in Table Bay with his three ships. His mission was not to establish a full-fledged colony at the Cape but to establish a supply station on behalf of the Dutch East India Company (DEIC); however, it committed itself when it granted nine company servants’ freedom in 1657 to establish private farms in the Rondebosch area below the eastern slopes of Table Mountain. One of the reasons why the Dutch settled at the Cape was to access the herds of cattle kept by the Khoi-Khoi, this was first achieved by friendly trade, however it was not long before disputes over land erupted after Free Burghers began to encroach on traditional communal grazing lands. By the early 1700’s the Dutch colonists have prevailed (Bergh 1999). These new white settlers will influence the context and content of South African’s culture forever, starting with the development of Cape Town into an urban center, however, it took many years for it to equal the size of the Mapungubwe Kingdom which was attained five centuries earlier (it is also argued that Mapungubwe was during its peak more developed than other areas in Europe). These newcomers also introduced a new style of houses consisting of flat roofs and ornate pediments, slaves were also imported from other parts of Africa, i.e., Madagascar, India, and East Asia, these slaves who were used as labourers were skilled carpenters and bricklayers as such their skills played an invaluable role in speeding up the progress and development of the Cape. It is important to note that the intermingling between the slaves, Africans, and the European population marked the beginning of the coloured community.

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

The history of KwaZulu-Natal (KZN) Province dates back to about 2 million years ago, marking the beginning of the Stone Age period. In KZN ESA has produced very little with regard to material culture, and as a result, very little is known about the ESA of the region. Olivier Davies, a pioneer archaeologist in the region is the only person to have researched the ESA period in the province recognised different traditions of the ESA which the traditions are characterised by heavy tools made from cores, such as scrapers, picks, hand axes, and cleavers (Davies 1974; Mazel 1989). Other than the stone tools, very little has been produced from the ESA sites in the province. The information on the diet of the ESA people in the province is sketchy; however, it can be assumed that their menu consisted of animals and plant food (Mazel 1989). The Middle Stone Age (MSA) is better researched in the province with widely known sites such as Umhlatuzana Rock Shelter



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(Butzer et al. 1978), and Sibudu Cave (Wadley 1996), Border Cave (Cooke et al. 1945), Umbeli Belli Rock Shelter (Mitchell 1998). The MSA was replaced by the Later Stone Age (LSA), Just like anywhere in South Africa, the LSA in the province is characterised by smaller tools but still performed the same tasks as those in the ESA and MSA. There are many LSA sites in the province, these include Mgede Shelter (Mazel 1988), KwaThwaleyakhe Shelter (Mazel 1993), and Inkolimahashi Shelter (Mazel 1999). The LSA of the KZN Province is dominated by its amazingly beautiful rock art at sites such as Game Pass, the Giants Castle, to name but a few (Williams 1981; Wilcox 1990; Hoerle & Solomon 2004, Nhundu 2015). There are no Stone Age sites in the study area. The absence of Stone Age sites in the study area does not equate to absence, but rather lack of focused research. The Natal Museum database indicates that there are several archaeological sites that have been recorded in the general area of Kokstad. Roodt & Roodt (2013) report some rock art sites in the wider region of Kokstad.

In KwaZulu-Natal Province, Early Iron Age (EIA) people occupied the region from the Great Lakes region of Congo and Cameroon (Huffman 2007). The EIA of KZN dates to around 500 and 900 AD. Based on ceramic traditions it is divided into Msuluzi (AD 500), Ndongondwane (AD 700-800), and Ntshekane (AD 800-900). When they first entered the region, the climate was dry and it only improved around AD 650 when they expanded into the interior of the region and settled in well-watered areas in the savanna or bushveld environments (van Schalkwyk 2013). They preferred these environments because they were suitable for both crop production and animal husbandry; they grew sorghum and millet and kept cattle (Maggs 1984). KZN was occupied by the Nguni-speaking group of the eastern stream characterised by a settlement pattern defined as the Central Cattle Pattern (CCP) (Huffman 1982, 2000). The earliest known type of settlement resembling the CCP is Moor Park which dates from the 14-16th century (Huffman 2007.) 2009). The LIA in KZN dates from AD 1300 to 1840. Although one of the most distinctive features of the LIA was massive stone wall structures, stone walls were not common in this part of the country, as the Nguni people used thatch and wood to build their houses (Maggs 1989; Huffman 2007). Artefacts associated with this period besides pots that cut across all divides are knife-blades, hoes, adzes, awls, bone tools, glass beads, and grinding stones. There are no Iron Age sites recorded in the study area, however, due to the fact that the study area is found in a farming area, the possibility of finding Iron Age sites is there. This is due to the fact that Iron Age Farmers favoured areas with arable soils, sweetveld grazing, and wood for domestic and industrial uses.



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The Greater Zululand was christened Natal by the Portuguese explorer Vasco da Gama in 1497. The colonial history of KZN starts around 1820 when early English ivory traders established themselves at Port Natal (Durban), at a time when Shaka, king of the Zulu was firmly in charge of the area. It is argued that the kingdom he established remained the most powerful in the region throughout the 19th century (Wright & Hamilton 1989). Shaka's majesty rule came to an end in 1828 when he was assassinated by his half-brothers Dingane and Mhlangana, with Dingane eventually taking over the kingship (Wright & Hamilton 1989). In 1837 Piet Retief led the Dutch descendants, the voortrekkers into Natal (Stapleton 2017). Interestingly the old wagon road which they used in 1838 when they were trooping down the slopes of the Drakensberg mountains into Pietermaritzburg can still be seen today (Oberholser 1972). After a series of battles between the two groups, the Zulus were defeated at the Battle of the Blood River in 1838, and the Boers established a short-lived republic called Natalie. In 1845 the Boer Republic of Natalie was annexed by the British. Northern and central parts of the province are strewn with sites of battles between the Zulus, Boers, and the British between 1800 and 1900s. In 1879 the British finally conquered the Zulu in the Anglo-Zulu war and acquired the area north of the Tugela River, the lands to the north of the Buffalo River were added in 1902 (Wright & Hamilton 1989).

As for uMhlathuze, it assumed status in 2001 August. The municipality is composed of Richards Bay, Empangeni, eSikhaleni, Port Durnfold, Vulindlela, Felixton, eNseleni, and Ngwelezane. UMhlathuze is named after the uMhlathuze River that meanders the larger area and connect it towns. Richards Bay was named after Frederick Richards who initially set the town as a makeshift harbour during the Anglo-Zulu War of 1879. In 1935 Richards Bay Game Sanctuary was established to protect the ecology and was later extended into Richards Bay Park in 1943. Richards Bay was proclaimed a town in 1969. Then, the early 1950s were accompanied by major expansion facilities as the South African Government, Minister of Transport Ben Schoeman decided to build a deep-water harbour at Richards Bay. The construction work began in 1972. In 1976 January, the Mthiyane Zulu clan was forced out of the town. The new harbour was built in 1976 April along with a railway line and gas pipeline connecting the port to Johannesburg. The new residential area of Richards Bay was founded north of the harbour. This was the Meerensee suburb in 1970, followed by the Arboretum in 1975 and VeldenVlei in 1980. The first three suburbs were built to accommodate white people only. A township for black people was established at Esikhaweni located 15km south of Richards Bay and the residential areas for the Indian and, coloured groups were developed after 1985 west of the VeldenVlei suburb.



9. 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 to the 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

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. Generally speaking, the following are guidelines for the nature of the mitigation that must take place as Phase 2 of the project.

High



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- 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 the rating system in the receiving environment.

Impact rating system

The table below is for the criteria used in the significance rating of the heritage resources in relation to the landscape.

Table 2: Impact criteria of significance

Status of Impact
The impacts are assessed as either having a: negative effect (i.e., at a 'cost' to the environment), positive effect (i.e., a 'benefit' to the environment), or Neutral effect on the environment.
Extent of the Impact



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(1) Site (site only),

(2) Local (site boundary and immediate surrounds),

(3) Regional (within the City of Johannesburg),

(4) National, or

(5) International.

Duration of the Impact

The length that the impact will last for is described as either:

(1) immediate (<1 year)

(2) short term (1-5 years),

(3) medium term (5-15 years),

(4) long term (ceases after the operational life span of the project),

(5) Permanent.

Magnitude of the Impact

The intensity or severity of the impacts is indicated as either:

(0) none,

(2) Minor,

(4) Low,

(6) Moderate (environmental functions altered but continue),

(8) High (environmental functions temporarily cease), or

(10) Very high / Unsure (environmental functions permanently cease).

Probability of Occurrence

The likelihood of the impact actually occurring is indicated as either:

(0) None (the impact will not occur),

(1) improbable (probability very low due to design or experience)

(2) low probability (unlikely to occur),

(3) medium probability (distinct probability that the impact will occur),

(4) high probability (most likely to occur), or

(5) Definite.

Significance of the Impact

Based on the information contained in the points above, the potential impacts are assigned a significance rating (S). This rating is formulated by adding the sum of the numbers assigned to extent (E), duration (D) and magnitude (M) and multiplying this sum by the probability (P) of the impact.

$$S=(E+D+M) P$$

The significance ratings are given below

(<30) low (i.e., where this impact would not have a direct influence on the decision to develop in the area),

(30-60) medium (i.e., where the impact could influence the decision to develop in the area unless it is effectively mitigated),

(>60) high (i.e., where the impact must have an influence on the decision process to develop in the area).

10. Findings and Discussions

The main aim of the survey was to evaluate potential heritage resources that may be found within the area of the proposed development, as well as to determine if there is any hamartia that may prevent the proposed upgrade of the Helipad and associated infrastructure. **Phase 1**



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Archaeological and Cultural Heritage Impact Assessment for the proposed upgrade of the Helipad and associated infrastructure identified no significant cultural or archaeological impacts on the footprint of the proposed area. Though there are no significant archaeological materials identified on the footprint of the proposed site; several structures scarred across the proposed area where noted. These structures are however of low significance since they are less than 60 years old and do not possess any social or aesthetic value.

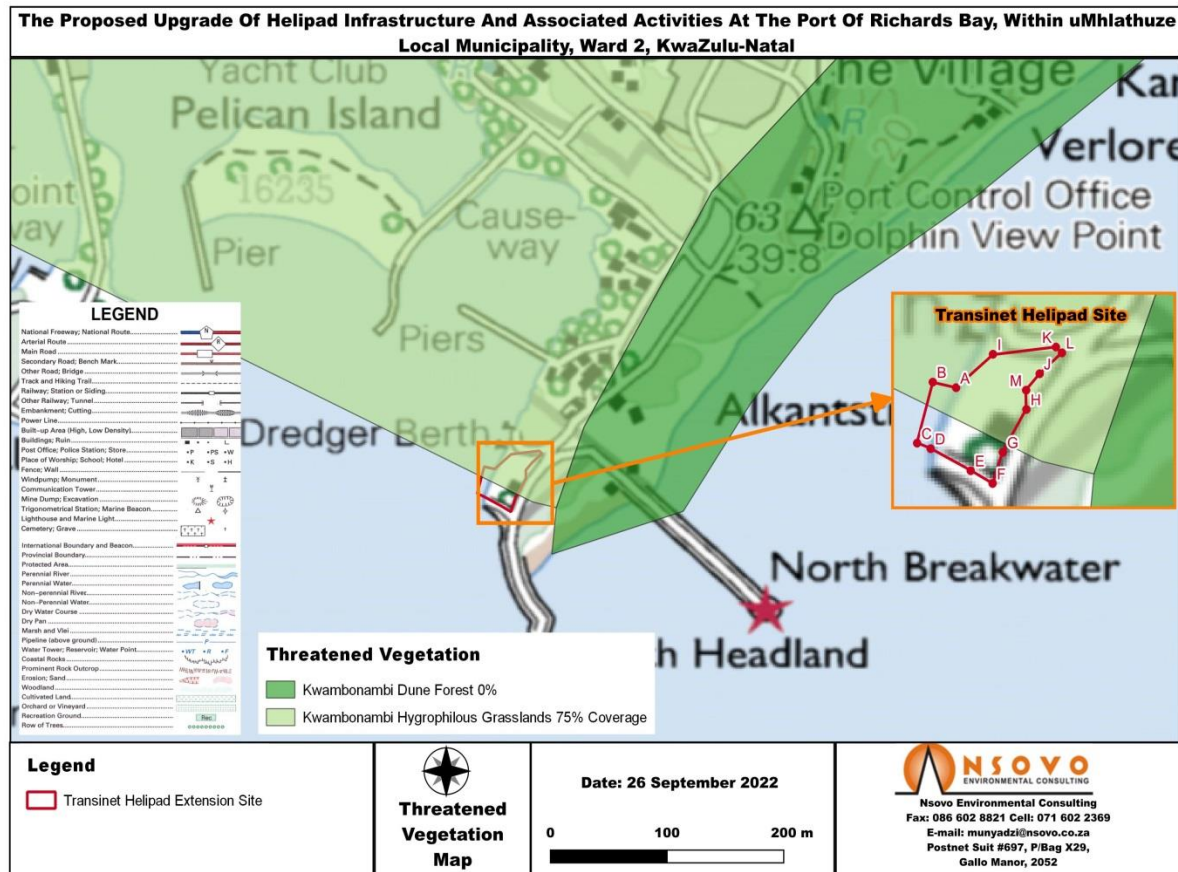


Figure 8: Map of the study area showing threatened vegetation (Nsovo 2022).



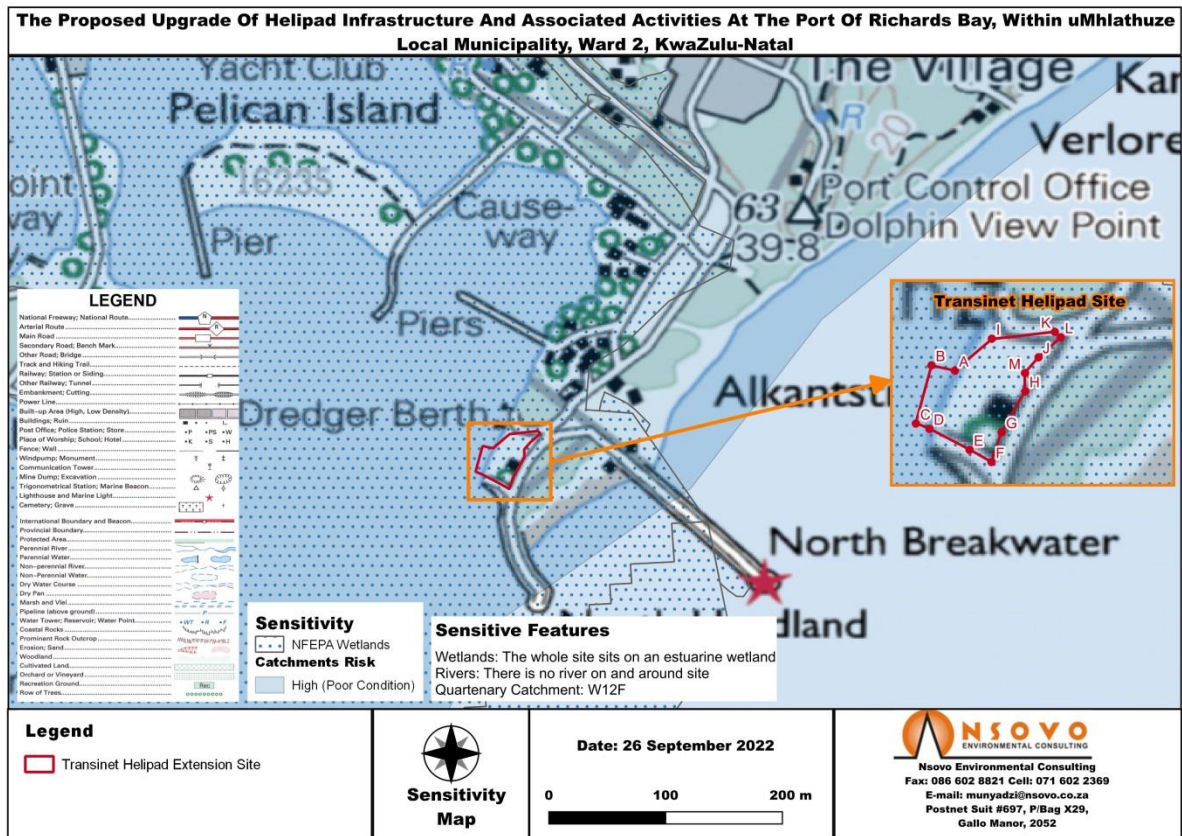


Figure 9: Map of the study area showing sensitive features (Nsovo 2022)

10.1. Impact assessment

Below is the impact rating table of the proposed upgrade of Helipad Infrastructure and Associated Activities. Note that these impacts are assessed as per section 8 (See table 2) above. Impact criteria of significance:

Table 3: Anticipated impact rating

Nature: During the construction phase activities resulting in disturbance of surfaces and/or sub-surfaces may destroy, damage, alter, or remove from its original position archaeological material or objects.

	Without Mitigation	With Mitigation
Extent	Site (1)	Site (1)
Duration	Permanent (5)	Permanent (5)
Magnitude	Low (2)	Low (2)
Probability	Not Probable (2)	Not probable (2)



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Significance		Low (16)	Low (16)
Status		Negative	Negative
Reversibility		Not irreversible	Not irreversible
Irreplaceable loss of resources		No loss of resources	No loss of resources
Mitigation: Exercise caution during the construction phase.			

11. Recommendations

Although no archaeological objects were observed during the survey, the client is reminded that these often happen underground, as such should any archaeological material be unearthed accidentally during the course of construction (e.g. excavation), SAHRA should be alerted immediately, and construction activities be stopped within a radius of at least 10m of such indicator. The area should then 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 Environmental Officer and the contractor to protect the site from publicity (i.e., media) until a mutual agreement is reached between the client and the consultant. It is mandatory to report any incident of human remains encountered to the South African Police Services, SAHRA staff members and professional archaeologists. Any measure to cover up the suspected archaeological material or to collect any resources is illegal and punishable by law under Section 35(4) and 36(3) of the National Heritage Resources Act, Act 25 of 1999. The developer must induct field workers about archaeology, and steps that should be taken in the case of exposing archaeological materials.

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 preconstruction 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 an 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); and



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- ✚ Packed stones that might be uncounted underground and might indicate a grave or collapsed stone walling.

11. Conclusions

The planning of the proposed project can proceed on the condition that the recommendations mentioned above 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



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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?

