



**PHASE 1 HERITAGE IMPACT
ASSESSMENT FOR THE PROPOSED
STORMWATER PIPELINE ALONG WEBSTER
STREET IN POLOKWANE LOCAL
MUNICIPALITY AREA, CAPRICORN
DISTRICT, LIMPOPO PROVINCE.**

DEVELOPED FOR



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I, Roy Muroyi, declare that –

- I act as the independent specialist in this application;
- I will perform the work relating to the application in an objective manner, even if this results in views and findings that are not favourable to the applicant;
- I declare that there are no circumstances that may compromise my objectivity in performing such work;
- I have expertise in conducting the specialist report relevant to this application, including knowledge of the Act, Regulations and any guidelines that have relevance to the proposed activity;
- I will comply with the Act, Regulations and all other applicable legislation;
- I have no, and will not engage in, conflicting interests in the undertaking of the activity;
- I undertake to disclose to the applicant and the competent authority all material information in my possession that reasonably has or may have the potential of influencing - any decision to be taken with respect to the application by the competent authority; and - the objectivity of any report, plan or document to be prepared by myself for submission to the competent authority;
- all the particulars furnished by me in this form are true and correct; and
- I realise that a false declaration is an offence in terms of regulation 48 and is punishable in terms of section 24F of the Act.



Signature of the Specialist

DISCLAIMER

Assumptions

- ⊕ The investigation was influenced by the unpredictability of buried archaeological remains (absence of evidence does not mean evidence of absence) and the difficulty in establishing intangible heritage values. It should be remembered that archaeological deposits (including graves and traces of mining heritage) usually occur below the ground level.
- ⊕ Should artefacts or skeletal material be revealed at the site during construction, such activities should be halted immediately, and a competent heritage practitioner, SAHRA must be notified in order for an investigation and evaluation of the find(s) to take place (see NHRA (Act No. 25 of 1999), Section 36 (6))
- ⊕ Recommendations contained in this document do not exempt the developer from complying with any national, provincial, and municipal legislation or other regulatory requirements, including any protection or management or general provision in terms of the NHRA.
- ⊕ The author assumes no responsibility for compliance with conditions that may be required by SAHRA in terms of this report.

EXECUTIVE SUMMARY

Tsimba Archaeological Footprints (Pty) Ltd was requested by Nemaï Consulting (Pty) Ltd to conduct a Phase 1 heritage impact assessment (HIA) for the proposed Storm water Pipeline along Webster Street in Polokwane Local Municipality area, Capricorn District, Limpopo Province.

The aim of the survey was to identify and document archaeological sites, cultural resources, sites associated with oral histories (intangible heritage), graves, cultural landscapes, and any structures of historical significance (tangible heritage) that may be affected within the footprint of the proposed development. This document will further review the consequence of the project and threats on cultural heritage properties. Subsequently, the Heritage Impact Assessment will work as a conflict solving tool to enhance the cultural heritage conservation.

The appointment of Tsimba Archaeological Footprints (Pty) Ltd is in terms of the National Heritage Resources Act (NHRA), No. 25 of 1999 read together with the National Environmental Management Act, 1998 (Act No. 107 of 1998) (NEMA). The HIA is completed in accordance to requirements of Section 38 (1) (a) of the NHRA, No. 25 of 1999. The size of the application area is approximately 2776.5ha hence Section 38 (1) of the NHRA is triggered:

- ⊕ *The construction of a road, wall, power line, pipeline, canal or other similar form of linear development or barrier exceeding 300m in length;*

The development may also impact on Cultural Heritage Resources such as graves, structures, archaeological and paleontological resources that are protected in terms of sections 34, 35, and 36 of the NHRA. The field assessment followed a systematic survey of the proposed development area as well as its neighbouring features. The aim of the survey was to locate, identify, evaluate and document sites, objects and structures of cultural significance found within the proposed project area. The Phase I Archaeological and Cultural Heritage Impact Assessment field survey for the proposed water pipeline project.

⊕ Conclusions:

From a heritage perspective, the proposed project is acceptable. This report concludes that the impacts of the proposed development on the cultural environmental values are not likely to be significant on the entire development site if the EMP includes recommended safeguards and mitigation measures identified in this report. However archaeological deposits usually occur below ground level. Should archaeological artefacts or skeletal material be revealed in the area during development activities, such activities should be halted, and a heritage specialist or Limpopo Provincial Heritage Resources Authority (LIHRA) must be notified in order for an investigation and evaluation of the find(s) to take place (NHRA (Act No. 25 of 1999), Section 36 (6). According to the SAHRIS Paleo Sensitivity map, the proposed development area is rated as a

ZERO

 paleo sensitive area and does not warrant any paleontological investigation.

⊕ Recommendations:

The following conditions must however be observed;

- ⇔ The construction teams must be inducted on the possibility of encountering archaeological resources that may be accidentally exposed during clearance and construction of the stormwater pipeline prior to commencement of work on the site in order to ensure appropriate mitigation measures and that course of action is afforded to any chance finds in accordance with the Chance Find Procedure.
- ⇔ Strict and clear reporting procedures for chance finds must be followed by the client and contractors throughout the construction period.
- ⇔ A qualified archaeology should be appointed to monitor the project and submit periodic archaeological watching briefs (AWB)¹ to the Limpopo Provincial Heritage Resources Authority (LIHRA).

¹ Archaeological watching brief (AWB) is a form of mitigation which is required when engineering works impact on areas that have been assessed as having some degree of archaeological potential

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ABBREVIATIONS

Acronyms	Description
AIA	Archaeological Impact Assessment
ASAPA	Association of South African Professional Archaeologists
CRM	Cultural Resource Management
DEA	Department of Environmental Affairs
EAP	Environmental Assessment Practitioner
EIA	Environmental Impact Assessment
ESA	Early Stone Age
GIS	Geographic Information System
GPS	Global Positioning System
HIA	Heritage Impact Assessment
LSA	Late Stone Age
LIA	Late Iron Age
LIHRA	Limpopo Provincial Heritage Resources Authority
MIA	Middle Iron Age
MSA	Middle Stone Age
SAHRA	South African Heritage Resources Agency

1st. INTRODUCTION

1.1 Project Background

Nemai Consulting (Pty) Ltd were appointed by the National Department of Health through Sakhiwo Health Solutions (Pty) Ltd. to prepare and submit an application for environmental authorisation and to undertake the related Environmental Impact Assessment (EIA) process for the proposed Limpopo Central Hospital located on Webster Street in Polokwane Local Municipality area, Capricorn District, Limpopo Province.

A 650mm diameter, 306 m, stormwater discharge pipe will need to be laid in Webster Street, which will tie into the Polokwane municipal system (an open formalised stormwater channel) at the northern end of Webster Street. This pipe will serve as the discharge pipe from Pond Zone 1, which is a stormwater attenuation pond on the proposed Limpopo Central Hospital grounds.

Nemai Consulting appointed Tsimba Archaeological Footprints (Pty) Ltd to undertake a Phase 1 HIA for the proposed stormwater pipe, which falls within the road reserve of Webster Street.

The Heritage Impact Assessment was conducted as part of the requirements of the National Heritage Resources Act, 1999 (Act No. 25 of 1999) (NHRA). International conventions regarding the protection of cultural resources have also been followed. The ICOMOS Burra Charter (1979) was also consulted for international heritage principles and policies applicable to this project.

The methodology given below is guided by the need to acknowledge different readings of heritage significance over time, i.e. heritage significance as a dynamic concept which includes the following (*see Figure 1 below*)

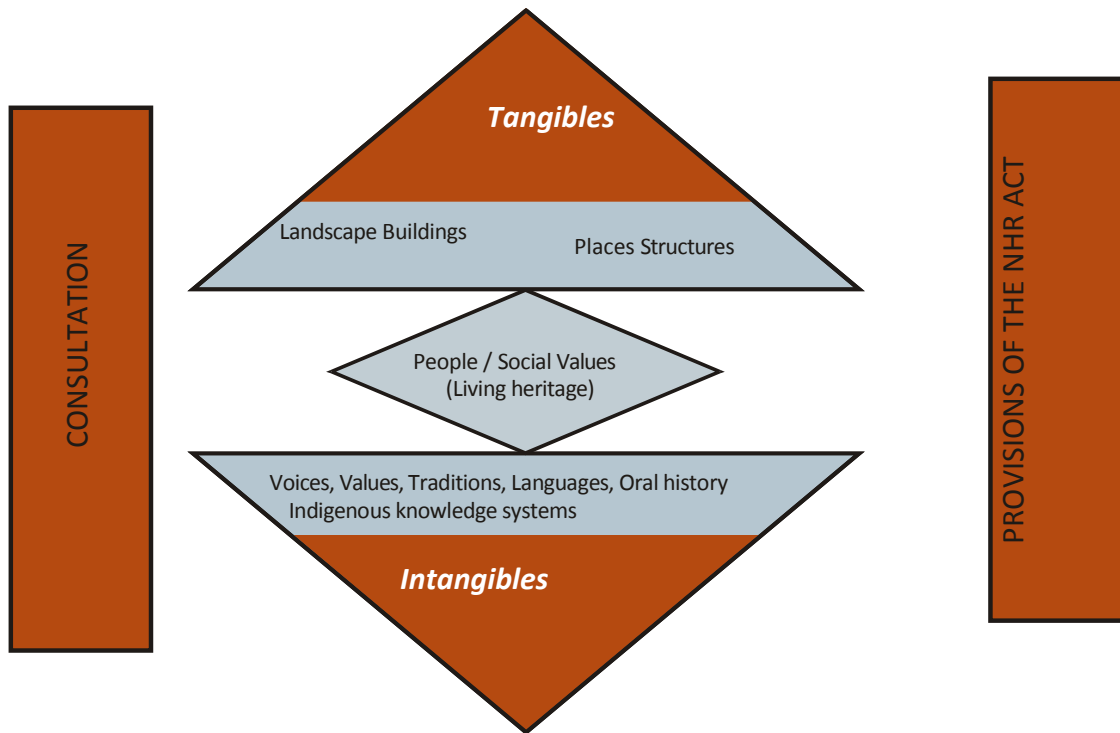


Figure 1: The Heritage Concept

1.2 Proposed Construction Activities

The proposal will entail the construction of the following (*This section was provided by the client*):

A new 650mm diameter stormwater discharge pipe will be laid in Webster Street, which will tie into the Polokwane municipal system (an open formalised storm water channel) at the northern end of Webster Street. This pipe will serve as the discharge pipe from Pond Zone 1, which is a storm water attenuation pond on the proposed Limpopo Central Hospital grounds. The length of the pipeline is 306 m. Activities associated with construction will include excavation, pipe laying, testing, and backfilling.

1.3 Risk assessment of the proposed project activities

The table below assesses and evaluates some of the risks associated with the proposed project on cultural heritage resources within the proposed development footprint.

Table 1: Risk assessment/ evaluation

EVALUATION CRITERIA	RISK ASSESSMENT
Description of potential impact	Negative impacts range from partial to total destruction of surface and under-surface movable/immovable relics.
Nature of Impact	Negative impacts can both be direct or indirect.
Legal Requirements	Sections 34, 35, 36, 38 of National Heritage Resources Act (No. 25 1999).
Stage/Phase	Construction phase (Excavations)
Nature of Impact	Negative, both direct & indirect impacts.
Extent of Impact	Excavations and ground clearing has potential to damage archaeological resources above and below the surface not seen during the survey.
Duration of Impact	Any accidental destruction of surface or subsurface relics is not reversible, but can be mitigated.

2ND. PROJECT LOACATION

The proposed development is located on the road reserve of Webster Street. Webster Street is located northeast of Polokwane Ward 22 in Capricorn District Municipality, Limpopo. The study area forms part of the so-called Pietersburg Plateau. This is a rather flat area, on average 1100m above sea level.



Figure 2: Locality map of the proposed development project



Figure 3: A cadastral Map showing the location of the study site within the broader Polokwane setting

3RD. METHODOLOGY

3.1 Literature review

The background information search of the proposed development area was conducted following the site maps from the client. Sources used in this study included:

- Published academic papers and HIA studies conducted in and around the region where the proposed infrastructure development will take place;
- Available archaeological literature covering the broader study area was also consulted;
- The SAHRIS website and the National Data Base was consulted to obtain background information on previous heritage surveys and assessments in the area; and
- Map Archives - Historical maps of the proposed area of development and its surrounds were assessed to aid information gathering of the proposed area of development and its surrounds.

3.2 Field survey

The field survey lasted for a day on the 24th of August 2021. It was conducted by archaeologists from Tsimba Archaeological Footprint through driving and walking. A ground survey, following standard and accepted archaeological procedures, was conducted.

The survey paid special attention to disturbed and exposed layers of soils such as eroded and disturbed surfaces. These areas are likely to yield archaeological and other heritage resources that may be buried underneath the soil and be brought to the surface by animal and human activities including animal barrow pits and human excavated grounds. The surface was also inspected for possible Iron Age scatters as we were guided by our literature review that noted the existence of Later Iron Age sites within the broader study area.

The survey followed investigated the cultural resources onsite using the best possible technologies for archaeological field surveys. The general project area was documented through photographs using a Nikon Camera (with built in GPS). A Samsung GPS Logger (2018) was used to record the archaeological finds on site.


3.3 Data Consolidation and Report Writing

Data captured on the development area (during the field survey) by means of a desktop study and physical survey is used as a basis for this HIA. This data is also used to establish assessment for any possible current and future impacts within the development footprint.

This includes the following:

- Assessment of the significance of the cultural resources in terms of their archaeological, built environment and landscape, historical, scientific, social, religious, aesthetic and tourism value.
- A description of possible impacts of the proposed development, especially during the construction phase, in accordance with the standards and conventions for the management of cultural environments;
- Proposal of suitable mitigation measures to minimize possible negative impacts on the cultural environment and resources that may result during construction;
- Review of applicable legislative requirements that is the NEMA (together with the 2014 EIA Regulations), the NHRA of 1999.
- The consolidation of the data collected using the various sources as described above;
- Acknowledgement of impacts on heritage resources (such as unearthed graves) predicted to occur during construction; and
- Geological Information Systems mapping of known archaeological sites and maps in the region
- A discussion of the results of this study with conclusions and recommendations based on the available data and study findings.

4TH. DESCRIPTION AND DOCUMENTATION OF THE CULTURAL HERITAGE RESOURCES

 *In terms of the national estate as defined by the NHRA no sites of significance were found during the survey as described below.*

This section includes a description of the baseline cultural heritage aspects of the environment that may be affected by the proposed activities as well as a description of the environmental issues that were identified and assessed during the impact assessment process. The proposed development area falls within an urban setting. Ground visibility was very good during the field survey. The proposed development site has been altered a number of times either during construction of the road, the properties closest to it and other construction of other services' along the road reserve.

These activities may possibly have cleared off archaeological remains along the road (if any existed). Therefore at the time of the archaeological survey, archaeological sustainability and visibility would have been compromised. During the site inspection no archaeological or any other cultural heritage resources were discovered within the proposed development footprint and its environs. It is however important to note that the lack archaeological sites / artefacts on the ground surface does not necessarily mean a lack of archaeological finds underground. Archaeological resources may still be discovered during excavations or any ground breaking activities during the construction phase. The proposed development area is known to be highly sensitive in Late Iron Age sites (***See Cultural Landscape Section***).



Figure 4: A southern view of Webster Street where the proposed pipeline will be laid underneath the road to connect with the existing water channel



Figure 5: View of the existing municipal water channel



Figure 6: View of a road reserve portion where the proposed pipeline will run along Webster Street.



Figure 7: View of a water drainage system along Webster Street. The proposed pipeline will run in between the road and the draining system



Figure 8: View of an existing pipeline along the road reserve. Note that the proposed pipeline will be laid much closer to the road before this existing pipeline

4.1 Built Environment

Section 34(1) of National Heritage Resources Act of 1999 protects these structures against any altering.

- ⊕ No standing structures older than 60 years occur in the study area.

4.2 Paleontological resources

Section 3(i) (i) objects recovered from the soil or waters of South Africa, including archaeological and palaeontological objects and material, meteorites and rare geological specimens

- ⊕ Fossils in South Africa mainly occur in rocks of sedimentary nature and not in rocks from igneous or metamorphic nature. Therefore, if there is the presence of Karoo Supergroup strata the palaeontological sensitivity can generally be **LOW** to **VERY HIGH** (Almond, 2013). In this case the proposed development area is marked as a zero paleontological sensitivity area. The rating of the heritage resources found within the proposed development area is provided in **(Figure 8)** below.

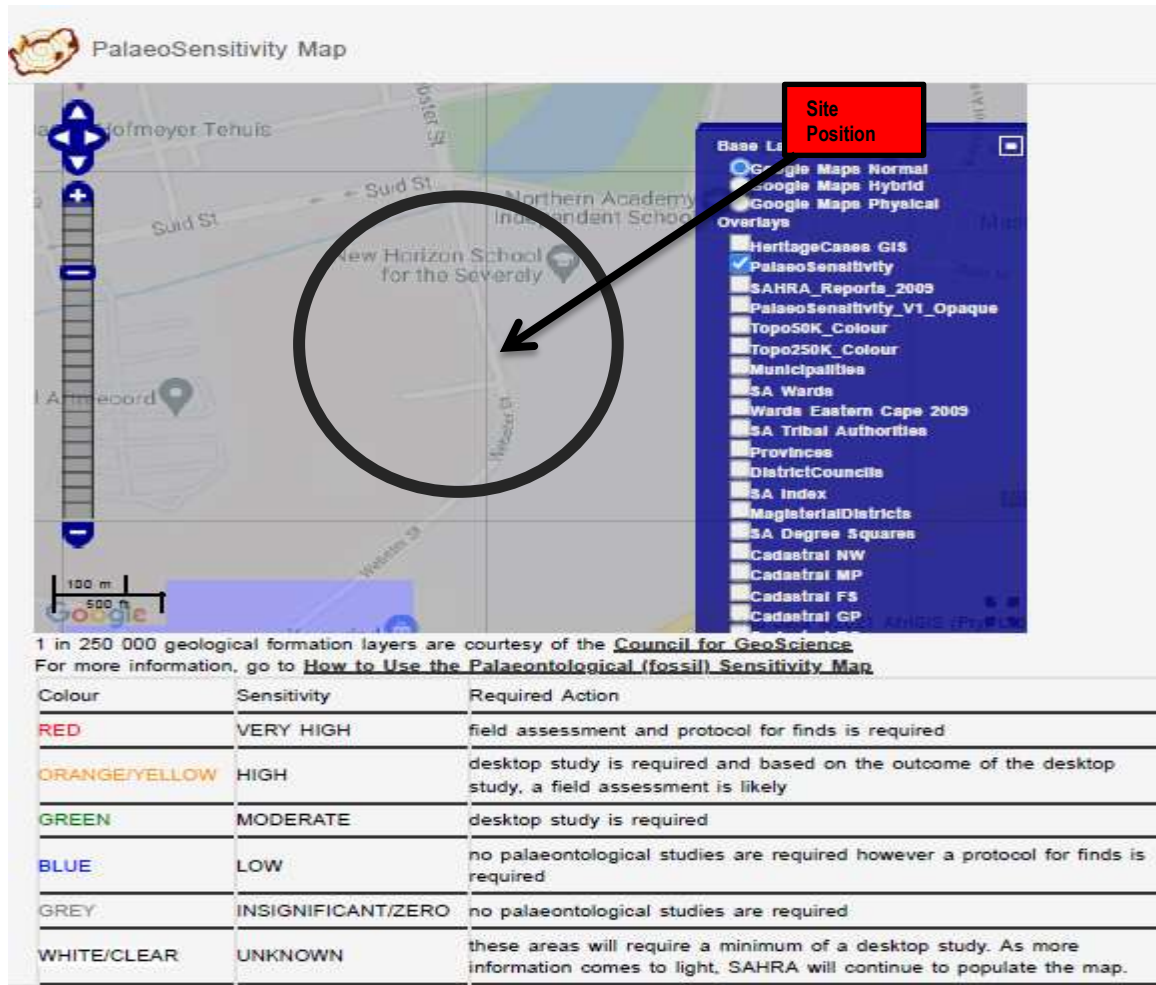


Figure 9: Paleontological sensitivity map of the study area given in accordance with the South African Heritage Resources Authority's (SAHRA) field rating of 2005.

4.3 Archaeological and resources

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

- ⊕ The survey did not record any archaeological sites. Ground visibility was very clear during the field survey making it easy to identify any archaeological sites that might occur within the proposed development footprint.

4.4 Intangible and Living Heritage.

Section 3 (3) of the National Heritage Resources Act, No. 25 of 1999 makes provisions of such places of spiritual significance to individuals

- ⊕ Long term impact on the cultural landscape is considered to be negligible as the surrounding area consists of relatively new buildings. Visual impacts to scenic routes

and sense of place are also considered to be low due to the nonexistence of any heritage resources within the study area.

4.5 Burial Grounds and Graves

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

⊕ No graves or burial grounds were recorded in along the proposed project area.

4.6 Public monuments and memorials

37. Public monuments and memorials must, without the need to publish a notice to this effect be protected in the same manner as places which are entered in a heritage register referred to in section 30.

⊕ There are no public monuments and memorials in the study area.

5TH SITE CULTURAL LANDSCAPE ANALYSIS

The European Landscape Convention (ELC) (Council of Europe 2000) gives the first formal definition addressing all landscapes. Formal definitions are based on a consensus between contributing parties and formulated in a convention that engage the parties signing it. ! Only one older formal definition of landscape exist: the one by the UNESCO World Heritage Convention (Rossler,2006) defining however only “cultural landscapes” and only if they have a “universal value”. Three main categories are recognised:

- ⇔ Designed landscapes have been created intentionally by man, such as gardens and parkland landscapes. They are constructed for aesthetic (and sometimes political) reasons and are often associated with monumental ensembles.
- ⇔ Organically evolved landscapes are the result of and have developed from the interactive process between a specific culture and in response to its natural environment. They fall into two sub- categories: elict (or fossil) landscapes are the ones that still show characteristic material features resulting from the processes that made them but came to an end continuing landscapes are the ones that are sustained by a still active traditional way of life in the contemporary society;
- ⇔ Associative cultural landscapes refer symbolically to powerful religious, artistic or cultural associations of the natural element rather than material cultural evidence.

The proposed development site is situated within a cultural landscape dominated by Later Iron Age sites. The archaeological survey carried out by Hutten (2019) shows that the landscape carries a number of Later Iron Age sites of High Significance. While this study did not encounter any archaeological sites, this study can however reinforce the availability of late farming communities from the literature encountered while compiling this report. The Hutten (2019) heritage impact assessment report noted the existence of (7) seven heritage sites have been documented North East of the proposed development footprint. All of them (*documented as LIM 003 through LIM 009*) were shown to be associated to Iron Age

occupancy. These cultural sites were most likely part of a village that Roodt (2001) found directly to the south of the Edupark Complex. The earliest occupation in the Edupark Complex can be related to the Eiland phase, while the Moloko (Sotho-Tswana) and Letaba (Ndebele) Late Iron Age sites are dated between 1000AD and 1650AD.

Archaeologists have combined oral histories, archaeological evidence and ethnography to study the history of the Ndebele in the old Pietersburg area which is now called Polokwane (Loubser, 1994). This Ndebele community is also known the Northern Transvaal Ndebele, following the colonial terminology used in ethnology (Loubser, 1994). Following oral history accounts, it is argued that the Pietersburg area was occupied by at least six groups in the period extending from AD1600 to AD1900. Following this, archaeological prospection of the Pietersburg area has revealed three distinctive typologies of Stone Walled Structures (Loubser, 1994). It follows that these distinctive stone walled structures also had three distinctive ceramic typologies suggesting three distinctive groups to have occupied these sites (Loubser, 1994). Following the classificatory scheme highlighted above, Loubser (1994) associated Group 1 type sites with the Eiland communities because the sites contained Eiland pottery. It is highlighted that these sites are geographically located on hilltops, and in the true tradition of colonial interpretation, this suggests that these sites were built in response to political upheaval (e.g. Boeyens, 2003). Although no scientific dating was conducted on these sites, they have been tentatively dated to around AD 1000 (Loubser, 1994).

It is argued that the Group II type sites mentioned above were authored by the Ndebele speaking communities, while some of them were built by the Koni communities. One of the sites falling under this group was radio-carbon dated to the 17th century (AD1600s). These settlements are located at the base of hills or on the slopes of valleys, and they all curiously face north. Lastly, researchers associate Group III sites with the Ndebele, Koni and Shangaan communities. Two of the sites falling under this group were radio-carbon dated between AD1850 – 1900 (Loubser, 1994) suggesting contact with Europeans at some point. These settlements share some characteristics with Group II sites in terms of location and physical attributes. However, these settlements contained scalloped walling common among the

Sotho Tswana (Pistorius, 1992; Fredriksen, 2007; Jordan, 2016). Additionally, two of the sites in the class are located on hilltops which could suggest royalty (see Boeyens, 2003; Mangoro, 2018). Loubser (1994) highlights that Group II and Group III sites contain similar pottery assemblages belonging to two distinctive styles namely; Sotho Tswana (Moloko) and Venda and North Eastern Sotho archaeologically known as Letaba (Loubser, 1994). Through analysis, the settlements in the three groups follow a chronological sequence of old to recent in the above order revealing successive occupation of the region for about a millennium.

Oral histories of the so-called Northern Ndebele suggest multiple origins of these communities, and the archaeological record of the old Pietersburg area appears to corroborate this. Loubser (1994) argues that the above ceramic styles reflect the distinctive origins of the Ndebele in the oral histories. Oral histories are replete with weaknesses which may render them unreliable. However, when they are corroborated with archaeological evidence such as in this scenario, they can be a formidable source of historical evidence.

⊕ Conclusions:

From a heritage perspective, the proposed project is acceptable. This report concludes that the impacts of the proposed development on the cultural environmental values are not likely to be significant on the entire development site if the EMP includes recommended safeguards and mitigation measures identified in this report. However archaeological deposits usually occur below ground level. Should archaeological artefacts or skeletal material be revealed in the area during development activities, such activities should be halted, and a heritage specialist or Limpopo Provincial Heritage Resources Authority (LIHRA) must be notified in order for an investigation and evaluation of the find(s) to take place (NHRA (Act No. 25 of 1999), Section 36 (6). According to the SAHRIS Paleo Sensitivity map, the proposed development area is rated as a

ZERO

 paleo sensitive area and does not warrant any paleontological investigation.

⊕ Recommendations:

The following conditions must however be observed:

- ⇔ The construction teams must be inducted on the possibility of encountering archaeological resources that may be accidentally exposed during clearance and construction of the stormwater pipeline prior to commencement of work on the site in order to ensure appropriate mitigation measures and that course of action is afforded to any chance finds in accordance with the Chance Find Procedure.
- ⇔ Strict and clear reporting procedures for chance finds must be followed by the client and contractors throughout the construction period.
- ⇔ A qualified archaeology should be appointed to monitor the project and submit periodic archaeological watching briefs (AWB)² to the Limpopo Provincial Heritage Resources Authority (LIHRA).

² Archaeological watching brief (AWB) is a form of mitigation which is required when engineering works impact on areas that have been assessed as having some degree of archaeological potential

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ICOMOS Charter, Principles for the analysis, conservation and structural restoration of
architectural heritage (2003)

National Heritage and Resources Act of South Africa No. 25 of 1999

APPENDIX A: ARCHAEOLOGICAL CONTEXT OF THE BROADER STUDY AREA

The Polokwane area is synonymous with archaeological remains of the iron- and copper smelting installations, as well as rock paintings which date back to around 1000 B.C. The district also hosts the Eersteling Monuments in Pietersburg / Polokwane is the site of South Africa's first gold crushing site and its first gold power plant is marked by monuments. In 2017, Polokwane was named the "Greenest Municipality in South Africa". Archaeological sites recorded in the project region confirms the existence of Stone Age sites that conform to the generic SA periodization split into the Early Stone Age (ESA) (2.5 million years ago to 250 000 years ago), the Middle Stone Age (MSA) (250 000 years ago to 22 000 years ago) and the Late Stone Age (LSA) (22 000 years ago to 300 years ago). Stone Age sites in the region are also associated with rock painting sites. Cave sites also exist in the broader landscape.

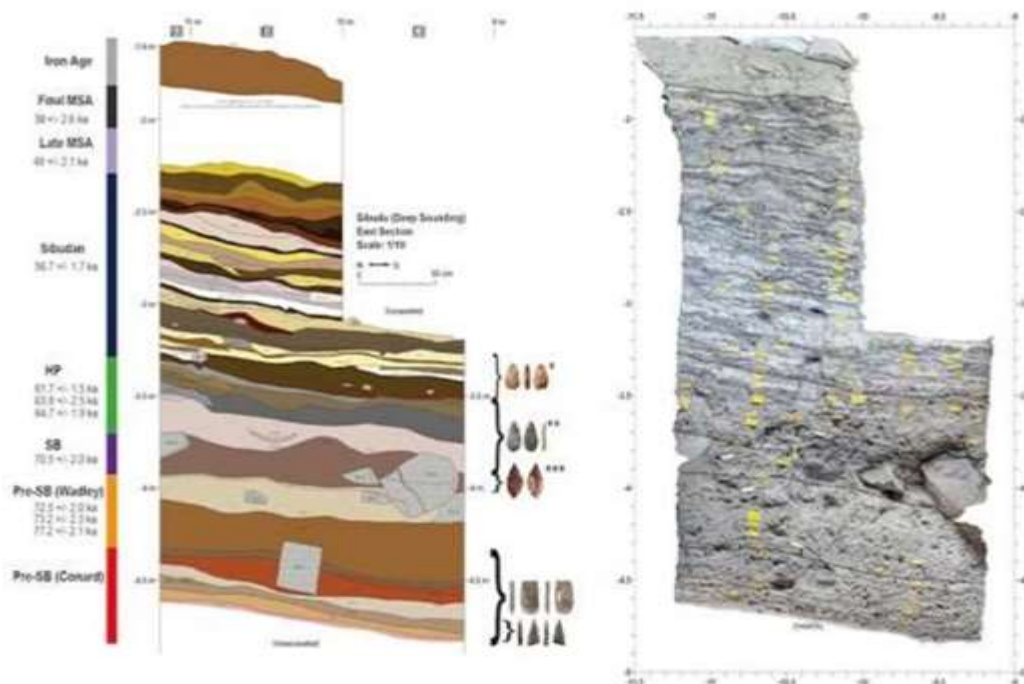


Figure 10: Archaeological layers showing different archaeological occurrences during different time periods in South Africa (Credit: Thackeray, 1992)

➤ EARLIER STONE AGE: THE BEGINNING OF TECHNOLOGY

The Stone Age dates back more than 2 million years representing a more explicit beginning of the cultural sequence divided into three epochs, the Early, Middle and Late Stone Ages.

These early people made stone and bone implements. This earliest stone tool industry is called the Oldowan, after Olduvai Gorge in Tanzania where the tools and their importance to hominid development were first recognised by Mary Leakey in the 1960s. To date Oldowan tools have only been found in Africa. This early technology is fairly consistent across Africa, in that the tools are mainly simple flakes struck from cobbles, a technology that appears to have been sufficient to meet the needs of early hominids as it persisted for a long time. At sites like Olduvai Gorge and Koobi Fora in Kenya, Oldowan tools remained unchanged until about 1,5 million years ago. Oldowan technology thus represents a long period of successful adaptation, which lasted for almost a million years.

In South Africa more than 3 million years ago appeared proto- human hominids. The Limpopo province is home to the World Heritage Site of Makapans Caves which yields evidence of hominid occupation by “Australopithecus africanus” from approximately 3.3 million years ago (Van Den Bergh et al ,2008). The Caves of Hearths is considered to be one of the two known in the world to have yielded an unbroken sequence showing evidence and artefacts of occupation of the caves through ESA, MSA, LSA, and right up to the Iron Age; and it is one of the few rock shelters to present Acheulian assemblages in Southern Africa (Mitchell 2002)

➤ ***MIDDLE STONE AGE: BECOMING MODERN***

The Middle Stone Age is marked by the introduction of a new tool kit which included prepared cores, parallel-sided blades and triangular points hafted to make spears. By then humans had become skilful hunters, especially of large grazers such as wildebeest, hartebeest and eland (Deacon and Deacon,1999). 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 (Mitchell 2002)

➤ ***LATER STONE AGE: SOCIAL AND TECHNOLOGICAL INNOVATION***

In the LSA period humans are classified as *Homo sapiens* which refer to the modern physical form and thinking capabilities. Several behavioural traits are exhibited, such as rock art and purposeful burials with ornaments, became a regular practice (Collins, 1973). During the Late Iron Age, farming was of significance in the region. These farming communities built numerous stone walled settlements throughout the Free State from the 17th century onwards. These sites are associated with the predecessors of the Sotho-Tswana, and are linked with the so-called N-, V-, R- and Z-Type of settlements which are respectively associated with Fokeng, Kwena, Kgatla and Rolong clans. LSA in this district is represented by the presence of rock art paintings and engravings are found in abundance in the Mohlapiitse River valley in the Wolkberg, Steelpoort valley and Olifants River (Changuion,2012). Studies in the Kruger National Park to the east have documented numerous Middle and Late Stone Age sites and it can be expected that all phases of the Stone Age are represented in the area (Pistorius, 2014).

➤ *ARRIVAL OF EARLY FARMING COMMUNITIES (EARLY IRON AGE)*

The expansion of early farmers, who, among other things, cultivated crops, raised livestock, mined ore and smelted metals, occurred in this area between AD 400 and AD 1100. Dates from Early Iron Age sites indicated that by the beginning of the 5th century AD Bantu-speaking farmers had migrated down the

These Early Iron Age sites tend to be found within 100m of water, either on a riverbank or at the confluence of streams. The close proximity to streams meant that the sites were often located on alluvial fans. The nutrient rich alluvial soils would have been favoured for agriculture. The availability of floodplains and naturally wetter soils would have been important for the practice of dry-land farming.

This may have been particularly so during the Early Iron Age when climate reconstruction for the interior of South Africa suggests decreased rainfall between AD 900 and AD 1100 and again after AD 1450.

➤ **LATE IRON AGE: INTENSIFICATION AND TRADE**

By the 1700s, with growing trade wealth, economically driven centres of control began to emerge and, following the establishment of Portuguese trade posts, in Limpopo Phalaborwa, was a well-known 'stopping place for inland traders' wishing to trade with outsiders and/or the regions northwest towards Polokwane and Rooiberg. These established routes no doubt influenced the Trekboers' decision to settle and encourage farming around Polokwane.

⇔ **Evidence of farming**

Historical records combined with 'Type Z' walling and archaeological evidence from areas around Polokwane to show that Bantu-speaking farmers occupied the area from around AD 1650 to AD 1700. The typical archaeology that is associated with these Iron Age farmers are the well-known stone-walled settlements (or 'Kraals') and their thick-walled, decorated ceramics. However there is not much evidence of farmers or herders south and to the West of Polokwane, with the evidence showing that most of this land was left unoccupied possibly because of its characteristically arid conditions.

Many of the Limpopo Province Iron Age sites are located near flood plains, along and near some of the major rivers, hill slopes and/or mountain areas (Huffman, 2007). The Iron Age of Limpopo Province region dates back to the 5th century AD when the Early Iron Age proto-Bantu-speaking farming communities began arriving in the area, which was then occupied by Stone Age people. The region is well known for the famous golden rhino that was recovered from Iron Age settlement site of Mapungubwe in the Limpopo Shashi Valley, now a UNESCO World Heritage Site. The first people in Mapungubwe were early Iron Age settlers. They lived there from about 1000 AD to 1300 AD, and around 1500 Iron Age subsistence farmers also settled there. Their existence is confirmed by the discovery by archaeologists of a few potsherds identified as Early Iron Age pottery. This means that they manufactured their own pottery and metal tools.

⇔ Evidence of Pottery

There is a curious absence of Nguni pottery in this region, yet it is widely believed that the Ndebele are connected to other Nguni speakers in the KwaZulu Natal area and its surrounding areas. Researchers argue that Nguni speaking people moved out of the Hlubi region of the modern KwaZulu Natal province and settled in the Old Transvaal to become archaeologically known as 'Northern Ndebele'. These Ndebele speakers allegedly split so that one group settled in the Mokopane area of Polokwane (Pietersburg) and another. The curious absence of Nguni like pottery assemblages in the region however persuaded researchers to speculate that the Northern Ndebele had a long history with the Venda and Northern Sotho rather than the Nguni speakers in the KwaZulu Natal region (Loubser, 1994).

The decision to occupy the Pietersburg Plateau (Polokwane) by the Ndebele would have been influenced by several reasons. Since agriculture was an integral component of the Ndebele economy in the so called Iron Age period, the choice of location would have been influenced by suitability of the biophysical qualities of the area. According to Loubser (1994), the Pietersburg Plateau is suitable for subsistence agriculture, and to date, the agricultural footprint is still visible on the landscape. In addition, Loubser notes that two ridges to the south of Pietersburg were used as grazing lands by the Ndebele farmers.

Loubser (1994) excavated one site each from the three classes discussed above. The excavations in a Group I site produced human remains, hut floors, ceramics, floor smothers, upper grindstones and bone pendants (Loubser, 1994). Group II excavations produced hut floors, floor smothers, stone milk strainers, pottery discs among other material culture. Finally, Group III sites yielded among other things upper grindstones, faunal remains (e.g. of cattle) iron ring, soap-stone slabs etc. In the analysis of these findings, Loubser spotted Eiland pottery which was excavated in the Old Eastern Transvaal (Evers, 1975). He argues that this pottery predates the oral histories of the Pietersburg Ndebele following tentative dating of between AD850 – 1200 (Loubser, 1994: 138). In addition to the Eiland ceramics, Moloko pottery of the Sotho Tswana speakers (Evers, 1981) tentatively dating to the 14th century (Loubser, 1991) was also excavated. Interestingly, Moloko pottery appears at the same time as the Letaba pottery in areas south of Pietersburg and discontinues when Mzilikazi ravaged the area during the Mfecane, on his way to modern day Zimbabwe.

Although the Letaba pottery has been strongly linked to the Ndebele, Loubser (1991) convincingly linked the same pottery to Venda speaking communities. Loubser argues that the Letaba pottery was a mixture of Moloko pottery of the Sotho Tswana and the Khami pottery of the Shona in the Soutpansberg area. In addition, Loubser (1991) articulated that only the Letaba pottery occurs at Soutpansberg during mid-16th century and early 20th century, a period in which Venda speaking peoples are known to have occupied the area.

The long Iron Age occupation sequence of the Pietersburg area is further discussed by Roodt (2010) who discovered archaeological resources at the Edupark complex. In their unpublished report, Roodt (date?) discovered human remains dating to 991 AD. They also discovered cow dung dating to the late 1600s while a midden dated to 1018AD. These findings fit into the common narrative that the Pietersburg area has an extensive history of occupation by African communities long before the Europeans arrived.

APPENDIX B: HISTORICAL CONTEXT OF THE BROADER STUDY AREA

⇔ Background of European Conquest in Polokwane/ Pietersburg

The area around Polokwane changed its name several times in the course of the history of South Africa. The British recognized the Boer Republic, the Zuid-Afrikaansche Republiek (ZAR) (Transvaal Republic), in 1853. The ZAR's existence was ended when the Boers lost the Second Anglo-Boer War of 1899-1902 and this area, including the Northern Transvaal, was incorporated into the British Empire. In 1910 the Transvaal was incorporated into the Union of South Africa with the Cape Province, Orange Free State and Natal. Later, in 1994, when democratic elections were held for the first time in South Africa, the Transvaal was restructured and the Northern Transvaal became known as the Northern Province. Pietersburg town was officially proclaimed on 31 July 1886 and was named after the Vice-President of the Transvaal Republic, Pieter Jacobus Joubert (Cooper and Vieler, 1995).

It is the largest city in Limpopo and is the commercial centre for the surrounding agricultural area. Iron, silicon and other minerals are mined nearby. (Cooper and Vieler, 1995) Pietersburg was a satellite town which looked to Johannesburg as the centre for guidance in its developmental needs. In the same way, Pietersburg /Polokwane became the centre in the Northern Transvaal (Limpopo Province) for the governance requirements of the surrounding satellite towns of Louis Trichardt /Makhado, Messina /Musina, Potgietersrus /Mokopane and Tzaneen, as well as the smaller hamlets of Soekmekaar, Haenertsberg, Duiwelskloof, Eersteling, Smitsdorp and Marabastad (Gitlin, 1950). The Pietersburg community followed had followed a growing trend of disappearing country communities from the late 1950s (Cooper and Vieler, 1995)

⇔ Anglo-Boer War 1899-1902 in Polokwane

The Anglo-Boer War 1899-1902 was fought between the British Government and the two Boer Republics of the Transvaal and Free State from October 1899 to May 1902. There were several reasons for the outbreak of war (Davidson and Filatova, 1998).

President Kruger's decision to pass legislation to deal with the immigration and expulsion of aliens caused much dissension between the Zuid-Afrikaansche Republiek Government and the Uitlanders. In 1890 the Volksraad raised the qualification for the franchise to 14 years as it feared that the Uitlanders would soon outnumber the original burghers (Davidson and Filatova, 1998).

This was because of the arrival of large numbers of Uitlanders on the Rand following the discovery of gold there. A petition by the Uitlanders requesting an easier franchise was contemptuously rejected by the Volksraad. The Uitlanders then appealed to the British Government for assistance. Three years after the discovery of gold in 1885, six mining houses dominated the industry. The mining houses had several grievances against Kruger's Government. These included the dynamite monopoly, the railways, food supply and the pass laws that hampered the hiring of blacks on the mines. President Kruger feared that if he acceded to the demands of the British or the mine- owners, he would lose his independence. Some people believed that the British really became involved in the Boer War because the British wanted control of the gold mines on the Witwatersrand (Cooper and Vieler, 1995)

⇔ **The Jameson Raid and Jewish Involvement**

This was an apparent attempt by Cecil John Rhodes's right-hand man, Sir Leander Starr Jameson, to overthrow the Kruger regime, took place in the Transvaal in 1895. Britain's Radical Left attributed the Raid to the connection between the Jewish financiers in the mining houses and British Imperialism. They saw the approaching war as the Randlords' war for gold. A new kind of political anti- Semitism was emerging in England. The Jewish so-called complicity in the Raid was exaggerated (Gitlin, 1950).

J A Hobson a radical English Left-wing journalist, who already disliked the rich Jews in England, considered the mining magnates to be Jewish swindlers. He believed that the Jewish Randlords with their financial power and political intrigue in the Jameson Raid, were to blame for the Boer War and for dragging England into the War. He claimed that the many Jewish mining capitalists sought to overthrow Kruger's Republic, because they

wanted to replace the Government with one more supportive of their need for a cheap and docile black labour force. However, although there were powerful Jewish leaders in the gold mining industry, they did not act together in a Jewish conspiracy. After the Raid, sixty-four members of the Reform committee were arrested. Of the four leaders, only Lionel Phillips was Jewish and of the 'rank and file,' only five were Jews⁸, including the Randlords Beit and Lippert, who were Jewish in name only but who were still perceived as Jewish by the anti- Semites (Dawidowicz,1992).

APPENDIX C: LEGISLATIVE FRAMEWORK

Appointment of Nema Consulting (Pty) Ltd:- The National Department of Health is required to obtain an Environmental Authorization (EA) in terms of the National Environmental Management Act, 1998 (NEMA, 1ct No. 107 of 1998) which involves the submission of a and Environmental Impact Assessment (EIA) Environmental Management Programme (EMPR). Nema Consulting (Pty) Ltd have been appointed by The National Department of Health as the Environmental Assessment Practitioner (EAP) to assist in complying with these requirements.

Appointment of Tsimba:- As part of the process Nema Consulting (Pty) Ltd requested Tsimba Archaeological Footprints to conduct a Phase 1 HIA as part of the Environmental Authorisation process .This HIA study is informed and conducted to fulfil the requirements of the National Heritage Resources Act (No 25 of 1999). The development also triggered the regulations applicable under the National Environmental Management Act 107 of 1998 and other environmental management acts of South Africa.

EIA/HIA Relationship:- As such, the EIA study includes a Heritage Impact Assessment specialist study, recommendations from the AIA/HIA report require the provincial heritage authority to review and comments to be incorporated into the final EIA Record of Decision. This particular Development triggered the following Sections of the Heritage Legislation;

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, power line, 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.

APPENDIX D: MAPS PRESENTATION OF THE PROPOSED DEVELOPMENT SITE

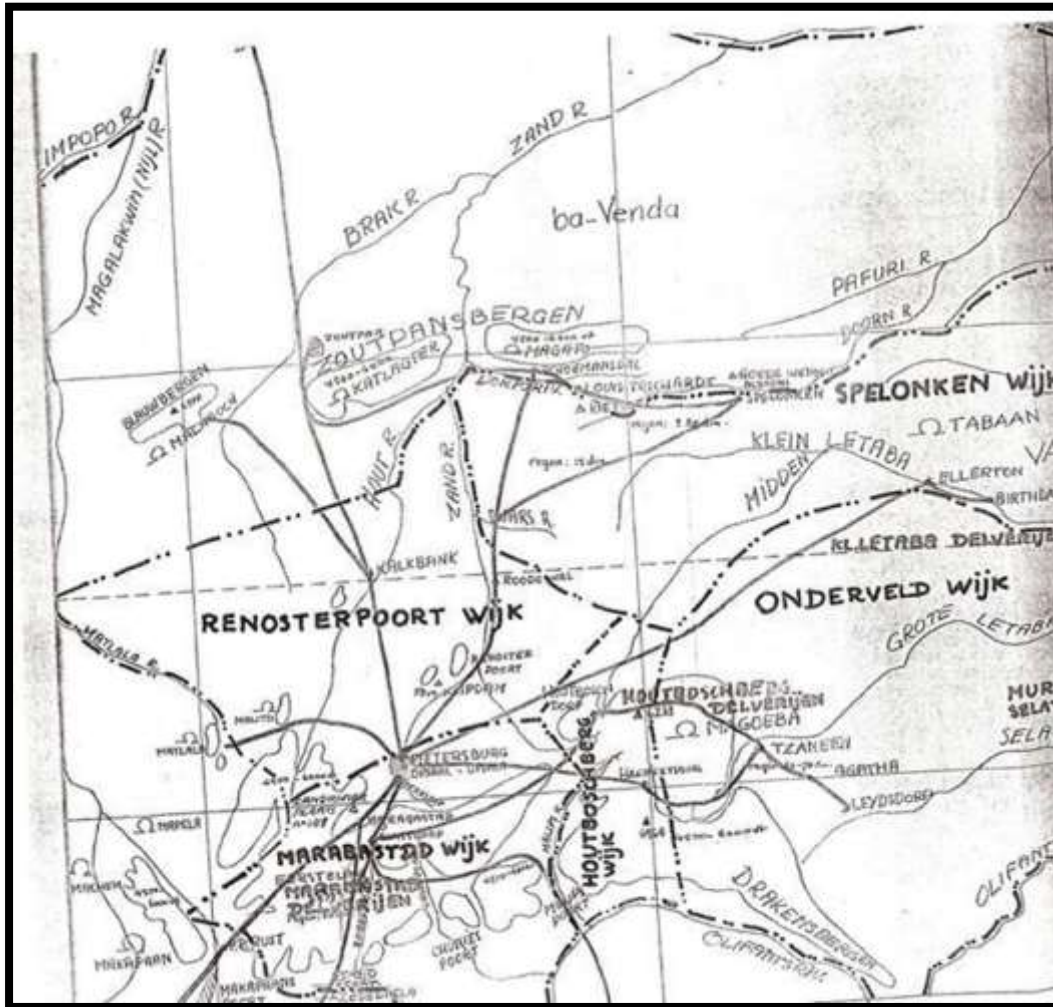


Figure 11: A historical map of Pietersburg area showing many of the places referred to in the *Appendix A* in the 19th century. The map shows many of the original names of places. It is for information only as no distance scale was available for this map (Credit : Van Asten 1899 – UNISA Archives) .

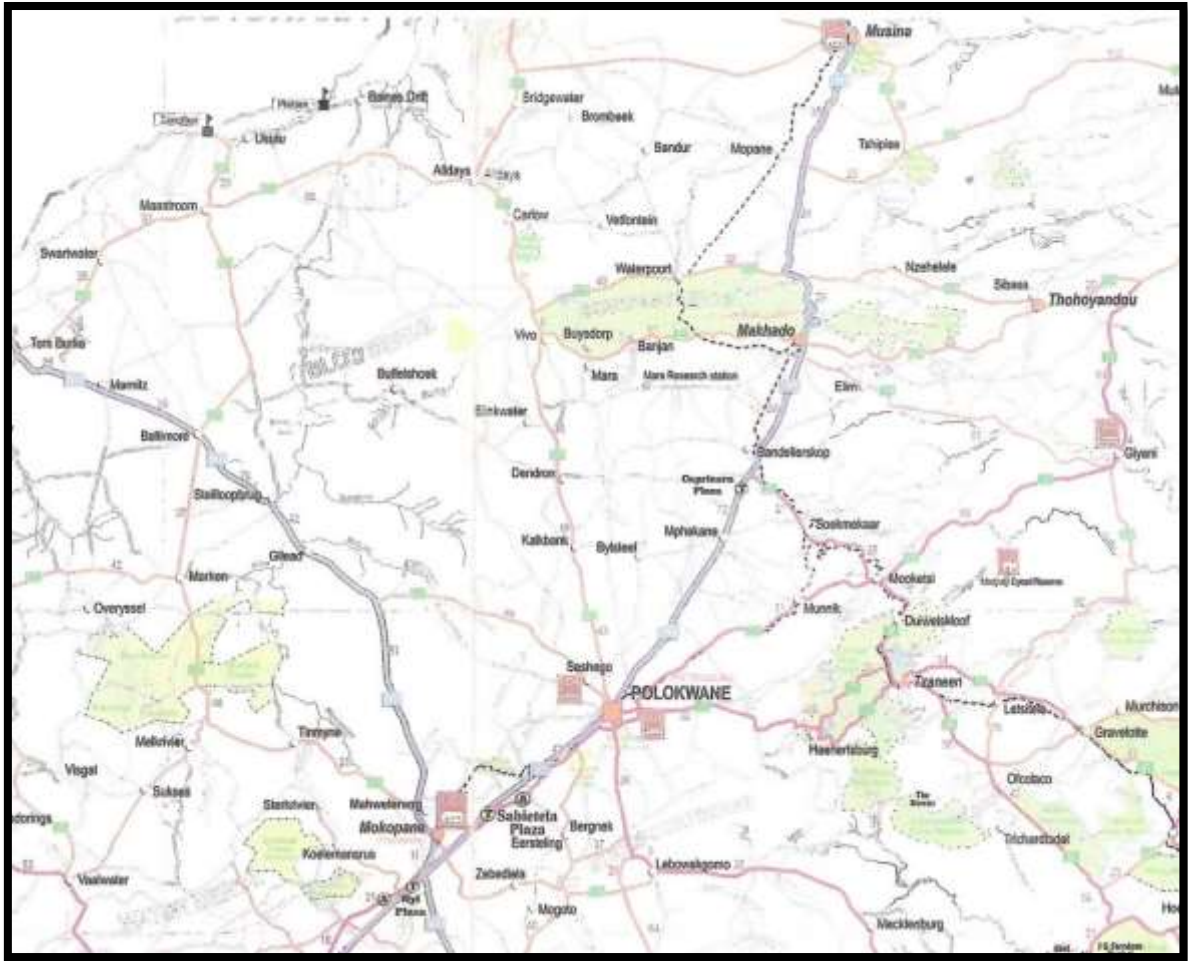



Figure 12: Map of Pietersburg 21st century, showing the new names of places mentioned in *Appendix A* (Credit: Graphix cc: Johannesburg, 2006)



Figure 13: GIS referenced heritage cases around the proposed development footprint

APPENDIX E: DEFINITION OF TERMS ADOPTED IN THIS HIA

 *The terminology adopted in this document is mainly influenced by the NHRA of South Africa (1999) and the Burra Charter (1979).*

Adaptation: Changes made to a place so that it can have different but reconcilable uses.

Artefact: Cultural object (made by humans).

Buffer Zone: Means an area surrounding a cultural heritage which has restrictions placed on its use or where collaborative projects and programs are undertaken to afford additional protection to the site.

Co-management: Managing in such a way as to take into account the needs and desires of stakeholders, neighbours and partners, and incorporating these into decision making through, amongst others, the promulgation of a local board.

Conservation: In relation to heritage resources, includes protection, maintenance, preservation and sustainable use of places or objects so as to safeguard their cultural significance as defined. These processes include, but are not necessarily restricted to preservation, restoration, reconstruction and adaptation.

Contextual Paradigm: A scientific approach which places importance on the total context as catalyst for cultural change and which specifically studies the symbolic role of the individual and immediate historical context.

Cultural Resource: Any place or object of cultural significance

Cultural Significance: Means aesthetic, architectural, historical, scientific, social, spiritual, linguistic or technological value or significance of a place or object for past, present and future generations.

Feature: A coincidental find of movable cultural objects (also see Knudson 1978: 20).

Grading: The South African heritage resource management system is based on a grading system, which provides for assigning the appropriate level of management responsibility to a heritage resource.

Heritage Resources Management: The utilization of management techniques to protect and develop cultural resources so that these become long term cultural heritage which are of value to the general public.

Heritage Resources Management Paradigm: A scientific approach based on the Contextual paradigm, but placing the emphasis on the cultural importance of archaeological (and historical) sites for the community.

Heritage Site Management: The control of the elements that make up the physical and social environment of a site, its physical condition, land use, human visitors, interpretation etc. Management may be aimed at preservation or, if necessary at minimizing damage or destruction or at presentation of the site to the public.

Historic: Means significant in history, belonging to the past; of what is important or famous in the past.

Historical: Means belonging to the past, or relating to the study of history.

Maintenance: Means the continuous protective care of the fabric, contents and setting of a place. It does not involve physical alteration.

Object: Artefact (cultural object)

Paradigm: Theories, laws, models, analogies, metaphors and the epistemological and methodological values used by researchers to solve a scientific problem.

Preservation: Refers to protecting and maintaining the fabric of a place in its existing state and retarding deterioration or change, and may include stabilization where necessary. Preservation is appropriate where the existing state of the fabric itself constitutes evidence of specific cultural significance, or where insufficient evidence is available to allow other conservation processes to be carried out.

Protection: With reference to cultural heritage resources this includes the conservation, maintenance, preservation and sustainable utilization of places or objects in order to maintain the cultural significance thereof.

Place: means a geographically defined area. It may include elements, objects, spaces and views. Place may have tangible and intangible dimensions.

Reconstruction: To bring a place or object as close as possible to a specific known state by using old and new materials.

Rehabilitation: The repairing and/ or changing of a structure without necessarily taking the historical correctness thereof into account (NMC 1983: 1).

Restoration: To bring a place or object back as close as possible to a known state, without using any new materials.

Site: A large place with extensive structures and related cultural objects. It can also be a large assemblage of cultural artefacts, found on a single location.

Sustainable: Means the use of such resource in a way and at a rate that would not lead to its long-term decline, would not decrease its historical integrity or cultural significance and would ensure its continued use to meet the needs and aspirations of present and future generations of people.

APPENDIX F: ASSESSMENT OF SIGNIFICANCE

Article 26(2) of the Burra Charter emphasises that written statements of cultural significance for heritage resources should be prepared, justified and accompanied by supporting evidence. Site significance classification standards prescribed by SAHRA (2006), and acknowledged by ASAPA for the SADC region, were used for the purposes of this report.

Table 2: Site Significance classification

SAHRA's Site significance minimum standards			
Filed Rating	Grade	Classification	Recommendation
National Significance (NS)	Grade 1		Conservation; National Site nomination
Provincial Significance (PS)	Grade 2		Conservation; Provincial Site nomination
Local Significance (LS)	Grade 3A	High Significance	Conservation; Mitigation not advised
Local Significance (LS)	Grade 3B	High Significance	Mitigation (Part of site should be retained)
Generally Protected A (GP.A)		High/ Medium Significance	Mitigation before destruction
Generally Protected B (GP.B)		Medium Significance	Recording before destruction
Generally Protected C (GP.A)		Low Significance	Destruction

Table 3: Site Significance calculation formula

Site significance is calculated by combining the following concepts in the given formula.

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

S = Significance weighting

E = Extent

D = Duration

M = Magnitude

P = Probability

The significance weightings for each potential impact are as follows:

The significance weightings for each potential impact are as follows:		
Aspect	Description	Weight
Probability	Improbable	1
	Probable	2
	Highly Probable	4
	Definite	5
Duration	Short term	1
	Medium term	3
	Long term	4
	Permanent	5
Extent	Site	1
	Local	2
	Regional	3
Magnitude/Severity	Low	2
	Medium	6
	High	8

Table 4: Impact Significance

Significance		
<p>It provides an indication of the importance of the impact in terms of both tangible and intangible characteristics. (S) is formulated by adding the sum of numbers assigned to Extent (E), Duration (D), and Intensity (I) and multiplying the sum by the Probability. $S = (E+D+M) P$</p>		
<30	Low	<p>Mitigation of impacts is easily achieved where this impact would not have a direct influence on the decision to develop in the area.</p>
30-60	Medium	<p>Mitigation of impact is both feasible and fairly easy. The impact could influence the decision to develop in the area unless it is effectively mitigated.</p>
>60	High	<p>Significant impacts where there is difficult. The impact must have an influence on the decision process to develop in the area.</p>

Table 5: Impact Assessment table

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	Local (2)	Site (1)
Duration	Permanent (5)	Permanent (5)
Magnitude	Low (2)	Low(2)
Probability	Improbable (1)	Improbable (1)
Significance	Medium(9)	Low(8)
Status	Negative	Negative
Reversibility	Not irreversible	Not irreversible
Irreversible loss of resources	No resources were recorded	No resources were recorded
Can impacts be mitigated?	Yes, a chance find procedure should be implemented.	Yes
↔ See Recommendations section		

APPENDIX G: VALUES CONTAINED IN THE REPORT

Table 6: Definitions of Values

Value	Definition
Historic value	Important in the community or pattern of history or has an association with the life or work of a person, group or organization of importance in history.
Scientific value	Potential to yield information that will contribute to an understanding of natural or cultural history or is important in demonstrating a high degree of creative or technical achievement of a particular period
Aesthetic value	Important in exhibiting particular aesthetic characteristics valued by a community or cultural group.
Social value	Have a strong or special association with a particular community or cultural group for social, cultural or spiritual reasons
Rarity	Does it possess uncommon, rare or endangered aspects of natural or cultural heritage
Representivity	Important in demonstrating the principal characteristics of a particular class of natural or cultural places or object or a range of landscapes or environments characteristic of its class or of human activities (including way of life, philosophy, custom, process, land-use function, design or technique) in the environment of the nation, province region