TSIMBA ARCHAEOLOGICAL FOOTPRINTS (PTY) LTD

CULTURAL DIVERSITY, SUSTAINABILITY & COMMUNITY ENGAGEMENT

PHASE 1 HERITAGE IMPACT ASSESSMENT FOR THE PROPOSED DEVELOPMENT OF THE NEW MOLOTO COMMUNITY HALL IN MOLOTO AREA, WITHIN THE JURISDICTION OF THEMBISILE HANI LOCAL MUNICIPALITY.

JULY 2019

PREPARED FOR THIKHO CONSULTING AND PROJECTS (PTY) LTD

Tsimba Archaeological Footprints (Pty) Ltd
Registration number: 2019/180069/07
Income Tax Number: 9586739188
24 Lawson Mansions
74Loveday Street, Johannesburg,CBD
Gauteng, 2000

AUTHOR'S CREDENTIALS

The report was compiled by Mr. Roy Muroyi, a professional Archaeologist. Mr Muroyi has over five years industry experience having practiced in three Southern African countries namely Zimbabwe, Botswana and South Africa. He has been involved in a range of Cultural Resources Management (CRM) projects and exhumed over 500 historical burials as a professional archaeologist in the Western Cape.

Mr. Muroyi is a holder of a Bachelor's Degree in Archaeology, Cultural Heritage and Museum Studies, Honours Degree, Archaeology, Cultural Heritage and Museum Studies (Midlands State University –Zimbabwe). He is also a Master of Science in Archaeology Degree candidate at the University of Witwatersrand –South Africa. Mr. Muroyi attended further training as a Laboratory Specialist for Human anatomy and human skeletal analysis through the University of Cape-Town human biology department in-conjunction with Cape Archaeological Surveys.

The author is accredited with the Association of Southern African Archaeologists (ASAPA-Southern Africa) under the Cultural Heritage Resources Management section (CRM) Professional No 453 for Industrial Archaeology, Iron Age, Colonial archaeology Human skeletal analysis and Grave relocations. He is also a member the Association of Professional Heritage Practitioners (APHP-Western Cape), International Association of Impact Assessments (IAIA- South Africa) and the Society of Black Archaeologists (SAB-International).

DECLARATION OF INDEPENDENCE

Tsimba Archaeological Footprints (Pty) Ltd is an independent service provider and apart from their fair remuneration for services rendered have no financial interest in the proposed development. We have disclosed any material information that have or may have the potential to influence the objectivity of any report or decisions base thereon; a9nd are very much aware that a false declaration is misleading and constitutes an offense in terms of regulation 71 of GN No. R. 543.

Contact Person	**Mr Roy Muroyi**
Responsibility	**Principal Heritage Investigator for Tsimba**
Cell	**+27619125118**
Email	**rmuroyi23@gmail.com**
Signature	

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This report including all its related data, project results and recommendations forming part of the submission and any other subsequent reports or project documents such as the inclusion in the Environmental Impact Assessment (EIA) document for which it is intended for totally vest with the author(s) Roy Muroyi and the company he represents Tsimba Archaeological Footprints (Pty) Ltd and the client

CLIENT DETAILS

Thikho Consulting and Projects (Pty) Ltd	
Client Contact Person	Ms. Marcia Mphaphuli
Contact Details	Email: thikhocp@gmail.com Cell: +2776 4800 802/0768237459

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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
EIA Practitioner	Environmental Impact 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
MIA	Middle Iron Age
MSA	Middle Stone Age
SAHRA	South African Heritage Resources Agency
PHRA-G	Provincial Heritage Resources Authority Gauteng

EXECUTIVE SUMMARY

Nkangala District Municipality (the proponent), proposes to develop a new Moloto Community Hall in Moloto Village. The project, is known as the proposed development of the new Moloto Community Hall in Moloto area, within the jurisdiction of Thembisile Hani Local Municipality. Thikho Consulting and Projects is preparing the Environmental Impact Assessment terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998) (NEMA).This report constitutes a summary of the Cultural Heritage Impact Assessment Study completed for the above mentioned project. There are two separate, but interlinked, objectives of the Heritage Impact Assessment Study. Firstly, it is to provide a baseline understanding of the known and potential historical cultural heritage landscape of the project development area. Secondly, it is to design and set in place a strategy and management regime for cultural heritage that is consistent with the provisions of relevant in terms of the requirements of the National Heritage Resources Act, 1999 (Act No. 25 of 1999) (NHR-A).The terminology used and the methodology followed with regards to the compilation of the HIA are explained and the legal framework stated ***(see Appendix A).***

The review of a range of cultural heritage information was undertaken. This included National heritage databases, lists and registers, as well as a range of other documented information (including heritage impact assessment reports and a range of ethno-historic and archaeological sources at both local and regional levels). From this it is clear that the project development area contains no cultural landscape that is of particular significance to the local communities. That is either relating to traditional and spiritual association. The area has been fairly extensively disturbed in the past due to various activities including being used as an informal football pitch by members of the local community. There is also some evidence of open pit mining or barrowing possibly by the surrounding local community. As a result any significant archaeological and/or historical sites or features that might have existed here in the past would have been extensively disturbed or destroyed.

This wider knowledge has also informed an understanding of the nature, form and location of other cultural heritage places that may be expected within the project development area and could be identified and recorded as part of further cultural heritage studies undertaken as part of the project.

This HIA is a systematic process of identifying the probable results of a proposed policy or action on the cultural heritage of a place and its communities. It is a decision support tool which provides input at the planning, works and operational stages to minimize or eliminate adverse effects through mitigation and to enhance positive impacts. In places where heritage is included in the EIA system as a component on a legal par with other environmental variables, practice has clearly shown the power of rigorous HIA as a tool to manage change and mitigate risk in order to preserve significance – the basic task of heritage management. As such, this HIA is the most important tool for managing change in Cultural Heritage Resources. Tsimba Archaeological Footprints fully appreciates that the developer retain a strong interest in ensuring that the cultural heritage areas, objects and values identified throughout the project development area are managed in an appropriate fashion and with their direct input.

Wherever possible, Tsimba Archaeological Footprints anticipates that this will be done by conservation of the area or object/s *in-situ* and avoidance of impact, consistent with the principles of the National Heritage Resources Act, 1999 (Act No. 25 of 1999) (NHRA) which the NHRA mandates as a provincial governing body in the development of the Mpumalanga province.

Recognising the constraints and limitations of the information reviewed and compiled regarding the cultural heritage of the project development area to which it has had access in the preparation of the HIA. Tsimba will formally commission and provide resources to each of the identified heritage places that they consider might be affected by proposed development activities within the project development area. The terms of reference for these constraints statements will be intentionally broad so as to allow the local community to take the greatest opportunity to describe any areas, objects and values about which they have concerns, especially graves within the older homesteads of the proposed development area

In relation to historical cultural heritage, it is noted that there are no cultural heritage sites noted within the proposed development area. The area is cleared out, making the visibility of any possible archaeological artefacts very clear.

Conclusions:

From a heritage perspective, the proposed project is acceptable. Due to the lack of any heritage resources in the study area the impact of the proposed project on heritage resources is considered low and it is recommended that the proposed project can commence subject to a Chance Finds Procedure (CFP) being implemented.

Recommendations:

a) Although unlikely, sub-surface remains of heritage sites could still be encountered during the construction activities associated with the project. Such sites would offer no surface indication of their presence due to heavy plant cover in other areas. The following indicators of unmarked sub-surface sites could be encountered;

i. Bone concentrations, either animal or human
ii. Ceramic fragments such as pottery shards either historic or pre-contact
iii. Stone concentrations of any formal nature

Although no sites of heritage significance were identified within the proposed study area, the following recommendations are given should any sub-surface remains of heritage sites be identified as indicated above;

i. All operators of excavation equipment should be made aware of the possibility of the occurrence of sub-surface heritage features and the following procedures should they be encountered.
ii. All construction in the immediate vicinity (50m radius of the site should cease).
iii. The heritage practitioner or PHRA-G should be informed as soon as possible.

b) Archaeological watching briefs at regular intervals should also be carried out to insure that no possible archaeological resources are lost during the construction phase.

INTRODUCTION

Project description

Thikho Consulting and Projects (Pty) Ltd was appointed by ASEDA, on behalf on Nkangala District Municipality (the proponent), to conduct a Basic Assessment process for the proposed development of the new Moloto Community Hall in Moloto area, within the jurisdiction of Thembisile Hani Local Municipality.The project, known as the proposed development of the new Moloto Community Hall. This proposed project is guided by the following South African legislations;

APPLICABLE LEGISLATION AND GUIDELINES USED TO COMPILE THE REPORT	REFERENCE APPLIED
The Constitution of the Republic of South Africa (Act No. 108 of 1996)	
The National Environmental Management Act (Act No. 107 of 1998)	Section 24 Section 28
The National Water Act (Act No. 36 of 1998)	Section 21 (a)(b)
Air Quality Act (Act No. 39 of 2004)	
National Forests Act, Act of 84 of 1998	
The National Heritage Resources Act (Act No. 25 of 1999)	Section 38, 34, 35, 36
Conservation of Agricultural Resources Act (Act No. 85 of 1983)	
Mineral and Petroleum Resources Development Act (Act No. 28 of 2002)	
Mine Health and Safety Act (Act No. 29 of 1996) (MHSA)	
Biodiversity Act (Act 10 of 2004)	
National Infrastructure Plan	

The Heritage Impact Assessment was conducted as part of the National Environmental Management Act, 1998 (Act No. 107 of 1998) (NEMA) requirements and it also follows the requirements of the National Heritage Resources Act, 1999 (Act No. 25 of 1999) (NHRA). The proposed development is in terms of the Environmental Impact Assessment (EIA)

Regulations of April 2017 published in terms of the National Environmental Management Act, 1998 (Act 107 of 1998) in respect of the application for Environmental Authorisation (EA) for the aforementioned activity. The proposed development is anticipated to trigger Listing Notice 3 activity 12(f)(iii) and activity 15(d)(i) in which case a Basic Assessment process is required, as activities which cannot commence without Environmental Authorisation from the competent authority.

The terminology used and the methodology followed with regards to the compilation of the HIA are explained and the legal framework stated ***(see Appendix A).*** International conventions regarding the protection of cultural resources have also been followed. The ICOMOS Burra Charter (1979) was also consulted in producing this report as part of the international conventions for the protection of cultural heritage places.

Scope of works

The proposed Community Hall will have male and female changing rooms, board room, office, kitchen, Guardhouse, male and female ablutions, store rooms and parking bays.

Aims of this Heritage Impact Assessment

This HIA aims to identify cultural heritage, assess potential impacts and mitigate them with a view to preserve and safeguard heritage resources. It is a measured, thorough presentation of facts and arguments and a realistic set of proposals for remedial and ameliorative action. The HIA process makes it the professional task of the HIA practitioner to find an acceptable approach which will preserve heritage values, satisfy as many stakeholders as possible, and be financially viable and practicable in conservation terms.

The assessment of impacts on heritage is needed today as cultural resources are being not only lost to development, but also exploited at an unsustainable rate. Heritage managers are faced with two principal challenges: ensuring the continuity and continued relevance of culture in the community and protecting both the fabric and significance of heritage assets from exploitation, misuse and degradation as a result of change.

This HIA provides the methodology to;

a) Safeguard the integrity of heritage resources in the face of these threats from development, or other scenarios of external change;

b) Negotiate a sustainable balance between the forces of change, progress and conservation in ways that maintain the authenticity of the threatened heritage, preserving its significance, meaning, and function in the life of the community;

c) Mitigate the adverse impacts of development and change, enhancing and adding value to the heritage as a result.

DESCRIPTION OF THE RECEIVING ENVIRONMENT

Location

The proposed development will be located of portion 0 of Farm Hatebeestspruit 235 JR in Moloto area within the jurisdiction of Thembisile Hani Local Municipality in the Nkangala District Municipality, Mpumalanga Province. See attached locality map.

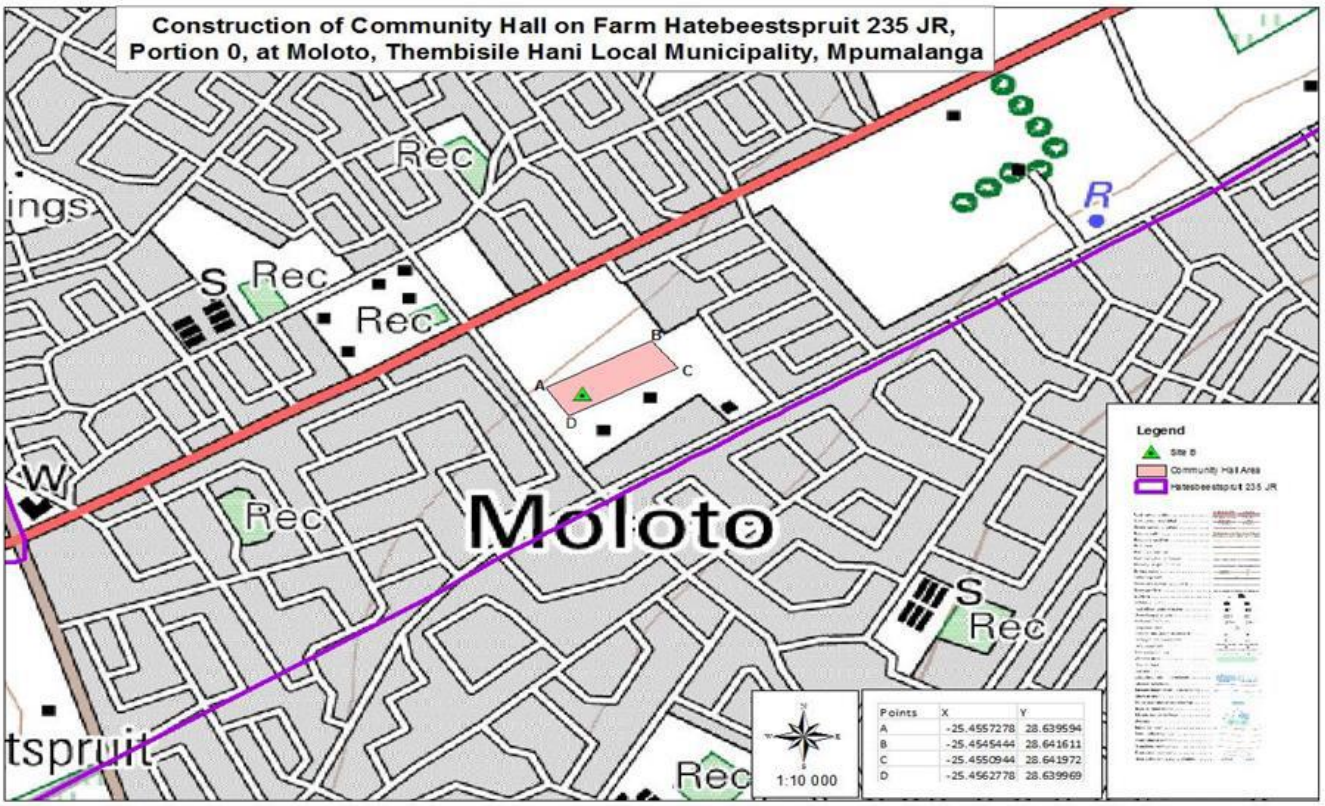

Figure 1: Locality map of the proposed project area the project area

Motivation for the project

The vision of Nkangala District Municipality is improved quality of life for all. The vision is achieved through technical services department of the municipality, planning and building

district-wide bulk services and community infrastructure. Some of the responsibilities include building recreational, sporting, and waste and libraries etc. within the district municipality. As part of this mandate, the district municipality has proposed to develop the Moloto Community Hall within Moloto Village is to assist in social and recreational activities within the area.

TERMS AND REFERENCE FOR APPOINTMENT OF AN ARCHAEOLOGICAL/HERIITAGE SPECIALIST

Tsimba Archaeological Footprints (Pty) Ltd has been appointed by Thikho Consulting and Projects (Pty) Ltd to conduct the HIA for the proposed development of the new Moloto Community Hall in Moloto area, within the jurisdiction of Thembisile Hani Local Municipality which requires a full HIA, in terms of Section 38 (1) of the NHRA, No. 25 of 1999. The development involves the construction of a linear development exceeding 300m in length; involving three or more existing erven or subdivisions as required for a HIA in terms of Section 38 (1) of the NHRA, No. 25 of 1999. The study forms part of an EIA conducted by Thikho Consulting and Projects (Pty) Ltd.

A Phase 1 HIA must address the following key aspects:

- The identification and mapping of all heritage resources in the area affected;
- An assessment of the significance of such resources in terms of heritage assessment criteria set out in regulations;
- An assessment of the impact of the development on heritage resources;
- An evaluation of the impact of the development on heritage resources relative to the sustainable social and economic benefits to be derived from the development;
- The results of consultation with communities affected by the proposed development and other interested parties regarding the impact of the development on heritage resources;
- If heritage resources will be adversely affected by the proposed development, the consideration of alternatives; and

- Plans for mitigation of any adverse effects during and after completion of the proposed development.

The work of the heritage specialist under the current national heritage legislation, is governed in various ways:

- Section 34 of the 1999 NHRA states that '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' This enables the relevant Provincial Heritage Resources Agency to request a historical archaeologist to conduct an assessment into the significance of an old building before a permit may be considered for its demolition.
- Section 38 of the same Act empowers the heritage agency to request a Heritage Impact Assessment (HIA) if there is reason to believe that heritage resources may be or will be affected by a proposed development. The Archaeological Impact Assessment (AIA) undertaken by the heritage specialist is part of this HIA.
- Sections 35 and 36 of the Act provide for the issuance of permits to destroy and damage archaeological artefacts and to relocate human remains where applicable.
- Pieces of legislation require Heritage Impact Assessments (HIAs) if the proposed development is a listed activity. Heritage Impact Assessments can be part of an Environmental Impact Assessment (EIA) undertaken in terms of the Environmental Conservation Act (No. 73 of 1989, as amended), the National Environment Management Act (as amended, No. 107 of 1998), the Mineral and Petroleum Resources Development Act (No. 28 of 2002), developments specified in Section 38 (1) of the National Heritage Resources Act (No. 25 of 1999).

METHODOLOGY

The methodology used in this HIA is based on a comprehensive understanding of the current or baseline situation; the type, distribution and significance of heritage resources as revealed through desk-based study and additional data acquisition, such as archaeological investigations, built heritage surveys, local interviews and recording of crafts, skills and intangible heritage. This is systematically integrated by the use of matrices with information on the nature and extent of the proposed engineering and other works to identify potential sources of impacts on heritage. Mapping of location and distribution of heritage in relation to proposed works or changes is a critical component of this baseline along with the assessment of the condition of resources. The following tasks were also undertaken in relation to the cultural heritage and are described in this report:

1. Review relevant South African legislations, policy and guidelines regarding South Africa cultural heritage and assess its implications to the proposed project.
2. Review existing information (such as previous reports, literature and databases) to identify known areas of archaeological and/or cultural importance in the project development area.
3. Assess the results of previous cultural heritage studies conducted within or in reasonable proximity to the project development area.
4. Settle a process for consulting with local communities and to further identify areas of cultural significance; and management measures that are appropriate in the project development area.
5. Identify, assess and map currently known areas of archaeological and/or cultural significance in the project development area.
6. Highlight issues to be addressed in the Heritage Impact assessment report
7. Prepare a Heritage Impact Assessment Study report documenting the work, including background information, methodology, data sources, assessment results, assumptions, potential impacts and issues, proposed impact mitigations, permitting requirements, conclusions and recommendations.

In respect of historical cultural heritage in the, following requirements were set:

1. At a minimum, a desktop study was undertaken documenting the known and potential historical cultural heritage values.

2. This study done by reference to the National Register and the results of previous heritage studies within the broader study area. There was consultations with local property owners and no disputes were recorded.
3. Any archaeological investigation recorded and assessed all types of historical places.
4. A Heritage Impact Assessment was developed for the project. It was to provide a process for the mitigation, management and protection of any places discovered during excavation, construction operations, rehabilitation and decommissioning phases of the project. It was to provide a process for reporting as per section 38 of the NHRA Act of 1999. It was designed to provide procedures for collection of artefacts discovered during the above. It was also designed to provide for a process of archaeological and heritage awareness training for project personnel provided during site induction.

LEGISLATIVE FRAMEWORK

This HIA study is informed and conducted to fulfil the requirements of the National Heritage Resources Act (No 25 of 1999). According to ICOMOS (2011), the impacts of planned developments (internationally) on heritage have typically been assessed within the framework of Environmental Impact Assessment (EIA) (CEU 1997; Bond et al. 2004) and/or Social Impact Assessment (Vanclay et al. 2015).This development also triggered the regulations applicable under the National Environmental Management Act 107 of 1998 and other environmental management acts of South Africa.

As such, the EIA study includes a Heritage Impact Assessment specialist study, recommendations from the AIA/HIA report require PRAH-G 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.

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

(a) Places, buildings structures and equipment of cultural significance;

(b) Places to which oral traditions are attached or which are associated with living heritage;

(c) Historical settlements and townscapes;

(d) Landscapes and natural features of cultural significance

(e) Geological sites of scientific or cultural importance';

(f) Archaeological and paleontological sites;

(g) Graves and burial grounds including-

(i) Ancestral graves;

(ii) Royal graves and graves of traditional leaders;

(iii) Graves of victims of conflict;

(iv) Graves of individuals designated by the Minister by notice in the Gazette

(v) Historical graves and cemeteries;

(vi) Other human remains which are not covered by in terms of the Human Tissue Act,1983 (Act No. 65 of 1983);

(h) Sites of significance relating to the history of slavery in South Africa;

(i) Moveable objects, including - 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; and

(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).

Heritage resources considered to be part of the national estate include those that are of archaeological, cultural or historical significance or have other special value to the present community or future generations.

The national estate may include:

- *places, buildings, structures and equipment of cultural significance;*
- *places to which oral traditions are attached or which are associated with living heritage;*
- *historical settlements and townscapes;*
- *landscapes and natural features of cultural significance;*
- *geological sites of scientific or cultural importance;*
- *archaeological and paleontological sites;*
- *graves and burial grounds including:*
  (i) ancestral graves;
  (ii) royal graves and graves of traditional leaders;
  (iii) graves of victims of conflict;
  (iv) graves of individuals designated by the Minister by notice in the Gazette;
  (v) historical graves and cemeteries; and other human remains which are not covered in terms of the Human Tissue Act, 1983 (Act No. 65 of 1983);
- *sites of significance relating to slavery in South Africa;*
- *movable 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)

ARCHAEOLOGICAL BACKGROUND

The Drakensberg separates the interior plateau also known as the Highveld from the low-lying subtropical Lowveld, which stretches to the Indian Ocean. A number of rivers amalgamate into two main river systems, the Olifants River and the Komati River. This fertile landscape has provided resources for humans and their predecessors for more than 1.7 million years.The initial attraction of abundant foods in the form of animals and plants eventually also led to the discovery of and utilisation of various minerals including ochre, iron and copper. In most parts of Mpumalanga, people obtained foreign resources by means of trade from the coast. From 900 AD this included objects brought across the ocean from foreign shores.

Sources of data

1) This project makes use of secondary literature as a source, as well as highlighting the most relevant such sources that exist. It is recognized here that events occurring many, many years ago still have relevance today. More specifically, there is a need to go back in time to identify how communities emerged, how they changed over time, and what forces brought about these changes.
2) The second source in this study are oral sources, which present their own set of challenges – in particular, bias of time in the context where oral sources are living long after the era on which they are providing their oral testimony. Nevertheless, this project provided the opportunity to gather – in a single project – the versions of the history of traditional communities provided by these communities themselves.
3) The third source of data for this study is the existing archives that are relevant for a study of the history of traditional leadership. In large part, these consist of official document generally written by white officials from the colonial era up to the end of the apartheid era.

ARCHAEOLOGICAL PERIOD	APPROXIMATE DATES <for less than and > for greater than
Earlier Stone Age	more than 2 million years ago to >200 000 years ago
Middle Stone Age	<300 000 years ago to >20 000 years ago
Later Stone Age **(Includes hunter-gatherer rock art)**	<40 000 years ago up to historical times in certain areas
Early Iron Age	c. AD 200 - c. AD 900
Middle Iron Age	c. AD 900 – c. AD 1300
Late Iron Age **(Stonewalled sites)**	c. AD 1300 - c. AD 1840 (c. AD 1640 - c. AD 1840)

Table 1: Archaeological time frames and thier brief descriptions

Early Stone Age

The criterion distinguishing between Men-like Apes and Ape-like Men in the evolution of mankind is apart from some skeletal features the ability to make tools. The oldest tools, (called Oldawan from where they were first found), are sharp stone flakes struck off a stone core with a stone hammer. Cores are recognized by concave scoops around the periphery and percussion lines on top. The flakes, irregularly shaped, concave or rough one side and convex the other, were used for cutting and scraping skins and bones as the first humans were scavengers. Flakes are common in all stone ages, but the Oldawan are identified from the age of the strata in which they are found, namely 2.5 million years to 150 000 years ago.

Sometime later, around 1.7 million years ago, more specialised tools known as Acheulean tools, appeared. These are named after tools from a site in France by the name of Saint Acheul, where they were first discovered in the 1800s. It is argued that these tools had their origin in Africa and then spread towards Europe and Asia with the movement of hominids out of Africa. These tools had longer and sharper edges and shapes, which suggest that they could be used for a larger range of activities, including the butchering of animals, chopping of wood, digging roots and cracking bone. Homo ergaster was probably responsible for the manufacture of Acheulean tools in South Africa. This physical type was arguably physically similar to modern humans, had a larger brain and modern face, body height and proportion

very similar to modern humans. Homo ergaster was able to flourish in a variety of habitats in part because they were dependent on tools. They adapted to drier, more open grassland settings. Because these early people were often associated with water sources such as rivers and lakes, sites where they left evidence of their occupation are very rare. Most tools of these people have been washed into caves, eroded out of riverbanks and washed downriver. An example in Mpumalanga is Maleoskop on the farm Rietkloof where Early Stone Age (ESA) tools have been found. This is one of only a handful such sites in Mpumalanga.

Middle Stone Age

The next development, about 250 000 years ago and lasting to about 30 000 years ago, is associated with the immediate predecessors of modern man. Instead shaping the tool after striking it off the core, the core itself was shaped and a striking platform prepared before the tool was struck off. This process makes possible parallel-sided blades and sharply pointed flakes ready for immediate use. Such tools have one shaped side, the other smoothly convex, with possibly minor touching-up, and are smaller than the Acheulian. Some of their flakes had one side flattened for fastening onto handles or shafts. Middle Stone Age people were hunter-gatherers.

These early humans not only settled close to water sources but also occupied caves and shelters. The MSA represents the transition of more archaic physical type (Homo) to anatomically modern humans, Homo sapiens. The MSA has not been extensively studied in Mpumalanga but evidence of this period has been excavated at Bushman Rock Shelter, a well-known site on the farm Klipfonteinhoek in the Ohrigstad district. This cave was excavated twice in the 1960s by Louw and later by Eloff. The MSA layers show that the cave was repeatedly visited over a long period. Lower layers have been dated to over 40 000 BP while the top layers date to approximately 27 000 BP (Esterhuizen & Smith in Delius, 2007; Bergh, 1998).

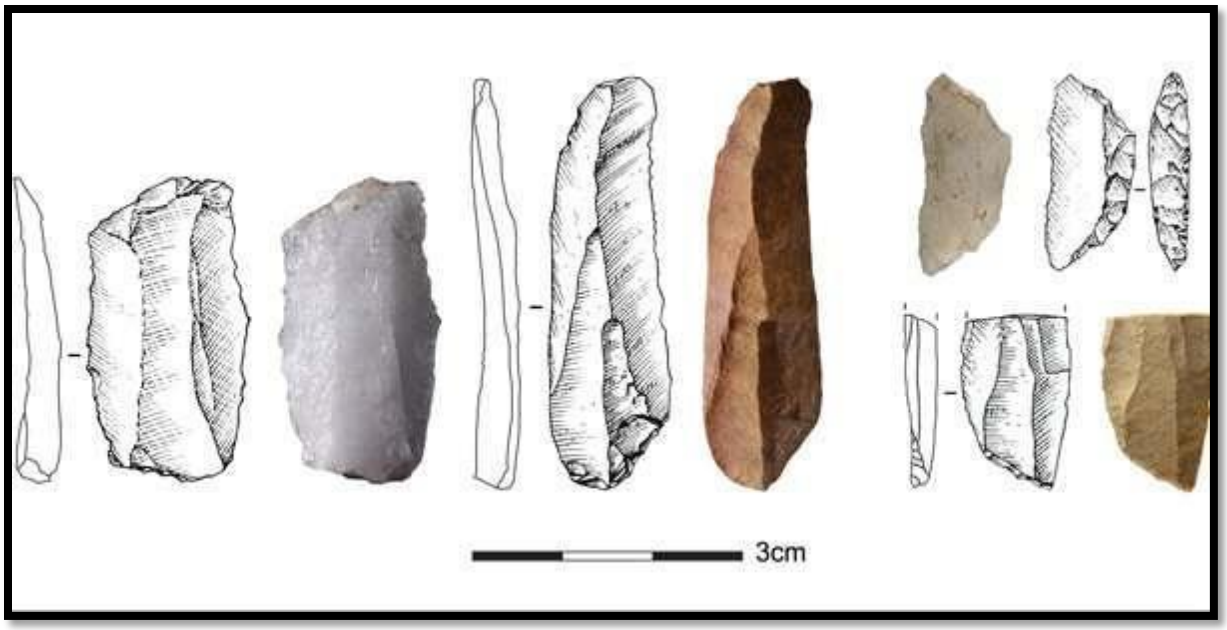

Figure 2: Stone Age tools mainly blades and backed knives (Credit: Univeristy of Witwatersand)

Later Stone Age

The start of the Late Stone Age is put at about 20 000 years ago, but in some places there is an overlap with the Middle Stone Age. It corresponds roughly with the appearance of Modern Man some 40 000 years ago. The Age is characterised by innovation. Their camps have revealed pottery, hearths, fire sticks and digging sticks. The tools vary according to material used-wood, bone or stone-or purpose-scraper, adze, knife blade, borer, arrow or spear-head. They are usually small and delicate and generally reworked to the required shape with one side blunt for attaching to a handle or shaft.

The LSA is usually associated with San hunter-gatherers or their immediate predecessors and date between 200 and 30 000 years ago (see Huffman 2007). The Late Stone Age, considered to have started some 20 000 years ago, is associated with the predecessors of the San and Khoi-Khoi.

The Iron Age

In Southern Africa, the Iron Age is the period covering the last 1800 years, when new people brought a new way of life to southern Africa. They established settled villages, cultivated

domestic crops such as sorghum, millet and beans, and they herded cattle as well as sheep and goats. As they produced their own iron tools, archaeologists call this the Iron Age.

Around10 000 and 15 000 years ago, different environments and barriers to contact moulded Africans into 4 genetic populations which linguists have correlated with the 4 major language groups. The Capoids speaking the Khoikhoi and San languages on the steppes and savannahs of Southern Africa, the Caucasoids speaking Afro-asiatic languages along the North African coast and down into the Horn of Africa and the Tall Negroids from the Sahara and bordering Sahel speaking Nilo-Saharan.

Ostrich eggshell beads were found in most of the levels at these two sites. It appears that there is a gap of approximately 4 000 years in the Mpumalanga LSA record between 9 000 BP and 5 000 BP. This may be a result of generally little Stone Age research being conducted in the province. It is, however, also a period known for rapid warming and major climate fluctuation, which may have led people to seek out protected environments in this area. The Mpumalanga Stone Age sequence is visible again during the mid-Holocene at the farm Honingklip near Badplaas in the Carolina district (Esterhuizen & Smith in Delius, 2007; Bergh, 1998). At this location, two LSA sites were located on opposite sides of the Nhlazatshe River, about one kilometre west of its confluence with the Teespruit. These two sites are located on the foothills of the Drakensberg, where the climate is warmer than the Highveld but also cooler than the Lowveld (Esterhuizen & Smith in Delius, 2007; Bergh, 1998). Nearby the sites, dated to between 4 870 BP and 200 BP are four panels, which contain rock art. Colouring material is present in all the excavated layers of the site, which makes it difficult to determine whether the rock art was painted during the mid- or later Holocene. Stone walls at both sites date from the last 250 years of hunter gatherer occupation and they may have served as protection from predators and intruders (Esterhuizen & Smith in Delius, 2007; Bergh, 1998).

A number of EIA pottery collections from Mpumalanga and Limpopo may be compared to the Plaston sample. They include Silver Leaves, Eiland, Matola, Klingbiel and the Lydenburg Heads site. The Plaston sample is distinguished from samples of these sites in terms of rim morphology, the majority of rims from Plaston are rounded and very few bevelled. Rims

from the other sites show more bevelled rims (Evers, 1977:176). Early Iron Age pottery was also excavated by archaeologist, Prof. Tom Huffman during 1997 on location where the Riverside Government complex is currently situated (Huffman, 1998). This site is situated a few km north of Nelspruit next to the confluence of the Nelspruit and Crocodile River. It was discovered during the course of an environmental impact assessment for the new Mpumalanga Government complex offices. A bulldozer cutting exposed storage pits, cattle byres, a burial and midden on the crest of a gentle slope. Salvage excavations conducted during December 1997 and March 1998 recovered the burial and contents of several pits. One of the pits contained, among other items, pottery dating to the eleventh century (AD 1070 ± 40 BP). This relates the pottery to the Mzonjani and Broederstroom phases. The early assemblage belongs to the Kwale branch of the Urewe tradition. During the early 1970s Dr Mike Evers of the University of the Witwatersrand conducted fieldwork and excavations in the Eastern Transvaal. Two areas were studied: the first area was the Letaba area south of the Groot Letaba River, west of the Lebombo Mountains, east of the great escarpment and north of the Olifants River. The second area was the Eastern Transvaal escarpment area between Lydenburg and Machadodorp.

These two areas are referred to as the Lowveld and escarpment respectively. The earliest work on Iron Age archaeology was conducted by Trevor and Hall in 1912. This revealed prehistoric copper-, gold- and iron mines. Schwelinus (1937) reported smelting furnaces, a salt factory and terraces near Phalaborwa. In the same year D.S. van der Merwe located ruins, graves, furnaces, terraces and soapstone objects in the Letaba area. Mason (1964, 1965, 1967, 1968) started the first scientific excavation in the Lowveld, followed by N.J. van der Merwe and Scully. M. Klapwijk (1973, 1974) also excavated an EIA site at Silverleaves and Evers and van den Berg (1974) excavated at Harmony and Eiland, both EIA sites. Research by the National Cultural History Museum resulted in the excavation of an EIA site in Sekhukuneland, known as Mototolong (Van Schalkwyk, 2007). The site is characterized by four large cattle kraals containing ceramics, which may be attributed to the Mzonjani and Doornkop occupational phases.

The later phases of the Iron Age (AD 1600-1800's) are represented by various tribes including Ndebele, Swazi, BaKoni, and Pedi, marked by extensive stonewalled settlements

found throughout the escarpment and particularly around Lydenburg, Badfontein, Sekhukuneland, Roossenekal and Steelpoort. The BaKoni were the architects of the stone-walled enclosures found throughout the escarpment area of Eastern Mpumalanga. These settlement complexes may be divided into three basic features: homesteads, terraces and cattle tracks. Researchers such as Mike Evers (1975) and Collett (1982) identified three basic settlement layouts in this area. Basically these sites can be divided into simple and complex ruins. Simple ruins are normally small in relation to more complex sites and have smaller central cattle byres and fewer huts. Complex ruins consist of a central cattle byre, which has two opposing entrances and a number of semi-circular enclosures surrounding it. The perimeter wall of these sites is sometimes poorly visible. Huts are built between the central enclosure and the perimeter wall. These are all connected by track-ways referred to as cattle tracks. These tracks are made by building stone walls, which forms a walkway for cattle to the centrally located cattle byres.

Historical Period

Domestication of the Environment

In Southern Africa the domestication of the environment began only a couple of thousands of years ago, when agriculture and herding were introduced. At some time during the last half of the first millennium BC, people living in the region where Botswana, Zambia and Angola are today, started moving southward, until they reached the Highveld and the Cape in the area of modern South Africa. As time passed and the sub-continent became fully settled, these agro-pastoralists, who spoke Bantu languages, started dominating all those areas which were ecologically suitable for their way of life. This included roughly the eastern half of modern South Africa, the eastern fringe of Botswana and the north of Namibia. Historians agree that the earliest Africans to inhabit in the Lowveld in Mpumalanga were of Sotho, or more particularly Koni-origin. When writing about Mpumalanga Province, it is perhaps best to briefly glance back to prehistoric times, when coals formed in vast swamps from rotting forests between z and 300 million years ago. Massive seams of vast coal fields have been discovered and extracted in the southern areas in the province. The areas surrounding the towns of Witbank, Middelburg, Bethal, Hendrina, Ermelo and Carolina had long provided South Africa with an abundant source of cheap energy. This discovery has also

had unfortunate effects on these areas, since the toxic by-products of burning coal in such quantities had severely polluted the soil and atmosphere in this area (Delius, 2007: 36-37). J. S. Bergh's historical atlas of the four northern provinces of South Africa is a very useful source for the writing of local and regional histories. According to this source no signs of major Stone Age or Iron Age sites are present in the vicinity of the Witbank area. The area was vacant of any settlement until the advent of the nineteenth century, when the Phuthing Tribe was prominent (Bergh, 1999: 4-5, 7, 10).

The Difaqane Period

Alex Schoeman in her 1997 MA dissertation Schoeman studied the Ndzundza Ndebele during the pre, *mfeqane* and before the Trekkers settled in the Northern Transvaal. In the period predating the settler occupation - the area under consideration is known to have been occupied by the different Sotho-Tswana and Ndebele tribal and culture groups. Out of these two culture groups the Sotho-Tswana are known to be endemic to the region. The presence of the Ndebele people within Gauteng Province in the past was partly influenced by the *Imfecane*, contributing to migrations and displacements of people in the region and many other parts of South Africa and southern Africa (Tomose, 2012). For example, in this region the *Imfecane* can be linked to the Ndebeles of Mzilikazi who later settled in Zimbabwe. Bakwena ba Motsile known as Moloto is one of the popular in history of the northern Pedi due the wars he fought with Sekhukhune and their noble relation later. Regent Kgoshi Manamela whom is called Nkoko, the history tells that he is the brother to Moloto. Now what is most important in this concept Moloto who sometimes was spelled Muluto that, Mamogale, Setsota, Kgabalatsane are counted as the southern Tswana, while the Manamela and Moloto, Maleka, Kganyago and Hlathla are counted as northern Tswana. The history of Bahlaloga Moletši will then be addressed by some sources collected from various institutions as mentioined together with oral tradition.

In a few decades, the course of history in the old Transvaal province would change forever. The Difaqane (Sotho), or Mfekane ("the crushing" in Nguni) was a time of bloody upheavals in Natal and on the Highveld, which occurred around the early 1820s until the late 1830s. It came about in response to heightened competition for land and trade, and caused population groups like guncarrying Griquas and Shaka's Zulus to attack other tribes.

Mzilikazi and his raiders had moved from the Northern Nguni area to the area north of the Vaal River by 1821. It has been recorded that the Ndebeles first attacked the Phuthing tribe, which in turn migrated to the south of the Vaal River and joined groups of Southern Sotho speakers.

The Phuthing and Southern Sotho tribes moved westward and northward and started raiding Tswana communities in the surrounding area. The Phuthing were commanded first by Chief Tshane, and later Ratsebe. As the Phuthing under Ratsebe moved eastwards along the Vaal River, they collided with Mzilikazi's Ndebele once more. The Phuthing and other raiding groups were finally taken captive in 1823 by Mzilikazi's men (Bergh, 1999: 14; 109-119). During the time of the Difaqane, a northwards migration of white settlers from the Cape was also taking place. Some white travellers, missionaries and adventurers had gone on expeditions to the northern areas in South Africa – some as early as in the 1720's. One such an adventurer was Robert Schoon, who formed part of a group of Scottish travellers and traders who had travelled the northern provinces of South Africa in the late 1820s and early 1830s. Schoon had gone on two long expeditions in the late 1820s and once again ventured eastward and northward of Pretoria in 1836

The Great Trek

The late 1820s saw a mass-movement of Dutch speaking people in the Cape Colony started advancing into the northern areas. they Trekked from the Cape Colony to avoid British Administration in the 1830s and 1840s (Tomose,2012). Therefore, the above mentioned towns can be attributed to the Great Trek movement and later the industrialisation of the Central Transvaal which came about with the discovery of gold in 1886. During the Great Trek these Afrikaaner communities, commonly referred to as the Boers (farmers), established two Boer republics north of the British Colonies. The republics included the Orange Free State (1845) and the Transvaal across the Vaal River where our current studies area is located. The Transvaal had different autonomous and separate states which were later united to form what became known as the Zuid Afrikaanse Republiek (South African Republic) the ZAR (Celliers, 2010).

Throughout the middle of the 1800 Century AD the Transvaal witnessed range of settlement patterns- the occupation and reoccupation of the region by the different culture groups that contributed to the contemporary peopling of the present day Gauteng Province north and south of the Magaliesburg mountain range. These are some of the various factors that contributed to this historical times settlement of the region.

- The first had to do with the politics (e.g. the Great Trek);
- The other was driven by the discovery natural resources such as the discovery of Diamond in the Kimberley in (1867);
- Coal in the eastern towns of the Witwatersrand, and later:
- Gold on farm Langlaagte.

The attraction of people to natural resources available in this province date as far back as the 1st Millennium AD, to MIA and the LIA periods alike. Therefore, the availability of natural resources played a pivotal role in the choice of settlement of the Transvaal, based not only from a subsistence point of view but also driven by commerce or commercial gains.

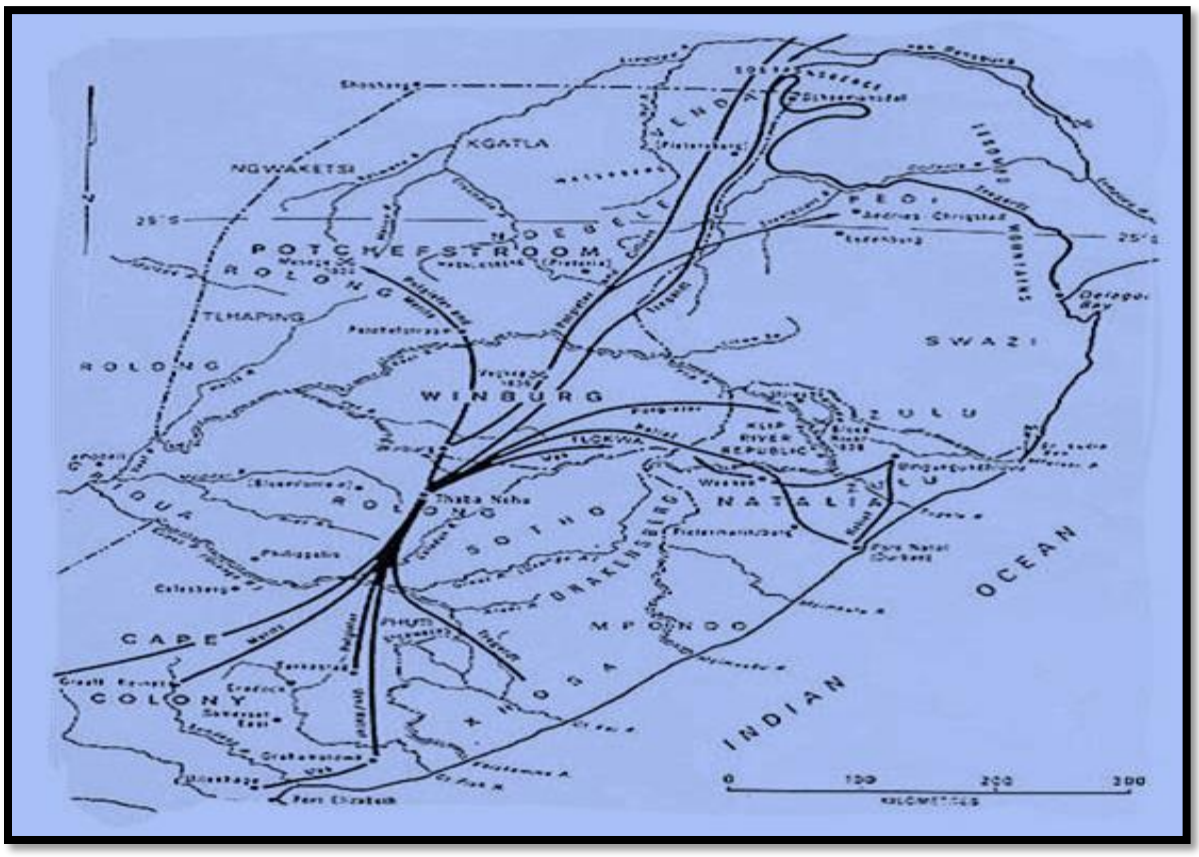

Figure 3: South African map showing the Great Trek. Boer families migrating up North during the 1820s (Credit: William Cullen Library Wits University)

The white settlement of the eastern areas of the Transvaal can be traced back to a commission under the leadership of A.H. (Hendrik) Potgieter who negotiated for land with the Portuguese Governor at Delagoa Bay (Maputo Bay) in 1844. It was agreed that these settlers could settle in an area that was four days journey from the east coast of Africa between the 10° and 26° south latitudes. Boers started migrating into the area in 1845. Andries-Ohrigstad was the first town established in this area in July 1845 after the Boers successfully negotiated for land with the Pedi Chief Sekwati. Farms were given out as far west as the Olifants River. The western boundary was not officially defined but at a Volksraad meeting in 1849 it was decided that the Elands River would be the boundary between the districts of Potchefstroom and Lydenburg as this eastern portion of the Transvaal was known.

Due to internal strife and differences between the various Boer groups settled in the broader Transvaal region, the settlers in the Ohrigstad area now governed from the town of Lydenburg decided to secede from the Transvaal Republic in 1856. The Republic of Lydenburg thus formed, laid claim to a large area that included not only the land originally obtained from the Pedi Chief Sekwati in 1849 but also other areas of land negotiated for from the Swazis. The Berlin Mission Society established one of the best known Mission Stations in the Transvaal at Middelburg in 1866 and it was named Botshabelo, which means the 'Place of Refuge'. It is a significant maker of missionary work by Alexander Merensky especially under the Pedi and Kopa. During its summit some 1600 people lived here (Delius, 2007:165). In 1858 the Zuid-Afrikaansche Republiek (ZAR) was officially established, and mainly consisted of all the other territories settled by the Boers in the Transvaal region. This development led to a boundary dispute between the ZAR and the Republic of Lydenburg regarding the western boundary of the latter.

The Republic of Lydenburg defended its claim by referring to the 1849 Volksraad resolution in which the Elands River was confirmed as that republic's western boundary. However, the ZAR made claims of an eastern boundary that stretched to the Olifants River. Nevertheless in 1860 the Republic of Lydenburg united with the ZAR as the District of Lydenburg and secede the land west of the Olifants River as part of the unification agreement to the District of Pretoria. In 1858, a group of Voortrekkers settled in the Bronkhorstspruit creek, which

was originally called Kalkoenkransrivier. A railway station was established on the present-day site of Bronkhorstspruit in 1894. In June 1897, the South African Republic gave its approval for the establishment of the town, by that time already named Bronkhorstspruit by locals. It was however only in 1905 that Bronkhorstspruit was officially proclaimed as a town. There is disagreement about how the town originally got its name. Some say that it was named after the farmer J. G. Bronkhorst, whereas other believe that it was named after the plant bronkors (the Afrikaans name for watercress), that grew in the region of the creek (Internet Archive N/A; Routes 2013). The building of the railway line between Pretoria and Delagoa Bay commenced after the Kruger Government gave the concession for the building of the line to the Nederlandsche,ZuidAfrikaansche,Spoorweg-Maatschappij (NZASM). The railway line was completed in 1895 (de Jong et al. 1988). A short and private railway route between Rayton and the diamond mining town, Cullinan, was built and completed by 1905. It was taken over by government in 1909 (Bergh, 1999: 330).

The Anglo -Boer War

The discovery of diamonds and gold in the Northern provinces had very important consequences for South Africa. After the discovery of these resources, the British, who at the time had colonized the Cape and Natal, had intensions of expanding their territory into the northern Boer republics. This eventually led to the Anglo-Boer War, which took place between 1899 and 1902 in South Africa, and which was one of the most turbulent times in South Africa's history. Even before the outbreak of war in October 1899 British politicians, including Sir Alfred Milner and Mr. Chamberlain, had declared that should Britain's differences with the Z.A.R. result in violence, it would mean the end of republican independence.

This decision was not immediately publicised, and as a consequence republican leaders based their assessment of British intentions on the more moderate public utterances of British leaders. Consequently, in March 1900, they asked Lord Salisbury to agree to peace on the basis of the status quo ante bellum. Salisbury's reply was, however, a clear statement of British war aims (Du Preez, 1977). During the British march into the Transvaal between February and September 1900 the battalions of Lieutenant Generals J. French, R. Pole-Carew and F. Roberts all travelled through Middelburg. After the British success at defeating

the Boers at Donkerhoek (near Bronkhorstpruit) on June 11 and 12 of 1900, they also succeeded in seizing Middelburg on 27 July (Bergh, 1999: 51). As a result of and during the War, a concentration camp for black people was located next to the railway station at Bronkhorstspruit. One of the conflicts of the war also took place a small distance to the southeast of the town.

DESCRIPTION AND DOCUMENTATION OF THE CULTURAL HERITAGE RESOURCES

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

The survey for the proposed project area did not result in the identification of any heritage or archaeological resources. The study area is characterised by a featureless flat landscape which lies in between residential stands and places of worship (churches). The residential areas are typical semi-urban dwellings, water and electricity reticulation infrastructure and streets and roads. The area has been fairly extensively disturbed in the past due to various activities including being used as an informal football pitch by members of the local community. There is also some evidence of open pit mining or barrowing possibly by the surrounding local community. As a result any significant archaeological and/or historical sites or features that might have existed here in the past would have been extensively disturbed or destroyed.

Figure 4: Part of the informal football pitch within the proposed development area

Figure 5:Evidence of barrowing on site

Figure 6:Part of the disturbed vegetation on site

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.

Archaeological and paleontological resources

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

During the survey, no archaeological or paleontological sites were recorded.

Cultural Landscapes, 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 a residential area. Visual impacts to scenic routes and sense of place are also considered to be low due to the previous developments in the area and the lack of significant sites.

Burial Grounds and Graves

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

No burial grounds and graves exist within the proposed development footprint.

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

Potential Impacts during Pre-Construction phase

It is assumed that the pre-construction phase involves the removal of topsoil and vegetation as well as the establishment of infrastructure needed for the construction phase. These activities can have a negative and irreversible impact on heritage sites. Impacts include destruction or partial destruction of non-renewable heritage resources.

Potential Impacts during Construction Phase

Possible direct impacts may might during the construction phase if the graves are to be disturbed. The impacts would however be of very low significance due to the fact that the noted graves and burial ground do not fall along proposed water pipeline route. During this phase, the impacts and effects are similar in nature but more extensive than the pre-construction phase. These activities can have a negative and irreversible impact on heritage sites. Impacts include destruction or partial destruction of non-renewable heritage resources.

Potential Impacts during Operation Phase

From a heritage perspective, no impact is envisaged f during this phase

ASSESSMENT OF SIGNIFICANCE

The importance of authenticity and integrity is based on the significance of heritage values as perceived within the preservation and conservation discourses. Within these two discourses, the intrinsic authenticity and integrity of the heritage object is used as the self-explanatory justification for listing a site as heritage (Tunbridge and Ashworth 1996). 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

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:

Table 3: 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
Scale	Local	1
	Site	2
	Regional	3
Magnitude/Severity	Low	2
	Medium	6
	High	8

Table 4: Impact Significance

Significance		
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*		
<30	Low	Mitigation of impacts is easily achieved where this impact would not have a direct influence on the decision to develop in the area.
30-60	Medium	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.
>60	High	Significant impacts where there is difficult. The impact must have an influence on the decision process to develop in the area.

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 (1)	Local (1)
Duration	Permanent (5)	Permanent (5)
Magnitude	Low (2)	Low(2)
Probability	Not Probable (2)	Not probable (2)
Significance	Low (16)	Low(16)
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
Mitigation: Due to the lack of any heritage resources within the proposed development footprint, no further mitigation is required prior to construction. A Chance Find Procedure should be implemented for the project should any sites be identified during the construction process.		

Conclusions:

From a heritage perspective, the proposed project is acceptable. Due to the lack of any heritage resources in the study area the impact of the proposed project on heritage resources is considered low and it is recommended that the proposed project can commence subject to a Chance Finds Procedure (CFP) being implemented.

Recommendations:

c) Although unlikely, sub-surface remains of heritage sites could still be encountered during the construction activities associated with the project. Such sites would offer no surface indication of their presence due to heavy plant cover in other areas. The following indicators of unmarked sub-surface sites could be encountered;

iv. Bone concentrations, either animal or human

v. Ceramic fragments such as pottery shards either historic or pre-contact

vi. Stone concentrations of any formal nature

Although no sites of heritage significance were identified within the proposed study area, the following recommendations are given should any sub-surface remains of heritage sites be identified as indicated above;

iv. All operators of excavation equipment should be made aware of the possibility of the occurrence of sub-surface heritage features and the following procedures should they be encountered.

v. All construction in the immediate vicinity (50m radius of the site should cease).

vi. The heritage practitioner or PHRA-G should be informed as soon as possible.

d) Archaeological watching briefs at regular intervals should also be carried out to insure that no possible archaeological resources are lost during the construction phase.

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APPENDIX A

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 epistimatological 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 B

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 or locality.