

PROPOSED MPUSHINI PARK HOUSING DEVELOPMENT, NEAR ESHOWE IN THE UMLALAZI LOCAL MUNICIPALITY KING CETSHWAYO DISTRICT OF THE KWA-ZULU NATAL PROVINCE

Heritage Impact Assessment (HIA) Report
Nov. 2020

CREDIT SHEET

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***Disclaimer;** Although all possible care is taken to identify all sites of cultural importance during the investigation of study areas, it is always possible that hidden or sub-surface sites could be overlooked during the study. G&A Heritage and its personnel will not be held liable for such oversights or for costs incurred as a result of such oversights.*

Statement of Independence

As the duly appointed representative of G&A Heritage, I Stephan Gaigher, hereby confirm my independence as a specialist and declare that neither I nor G&A Heritage have any interests, be it business or otherwise, in any proposed activity, application or appeal in respect of which the Environmental Consultant was appointed as Environmental Assessment Practitioner, other than fair remuneration for work performed on this project.

SIGNED BY: STEPHAN GAIGHER



MANAGEMENT SUMMARY

Project Name and Location

Proposed Mpushini Park Housing Development near Eshowe in the uMlalazi Local Municipality, King Cetshwayo District of the Kwa-Zulu Natal Province.

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Appointed By

Sidlubu Consulting



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Date of Report

26 November 2020

MANAGEMENT SUMMARY

The purpose of the management summary is to distil the information contained in the report into a format that can be used to give specific results quickly and facilitate management decisions. It is not the purpose of the management summary to repeat in shortened format all the information contained in the report, but rather to give a statement of results for decision making purposes.

This study focuses on the proposed Mpushini Park Housing Development near Eshowe in the uMlalazi Local Municipality, King Cetshwayo District of the Kwa-Zulu Natal Province.

This study encompasses the heritage impact investigation. A preliminary layout has been supplied to lead this phase of this study.

Scope of Work

A Heritage Impact Assessment (including Archaeological, Cultural heritage, Built Heritage and Basic Palaeontological Assessment) to determine the impacts on heritage resources within the study area.

The following is required to perform this assessment:

- A desk-top investigation of the area;
- A site visit to the proposed development site;
- Identify possible archaeological, cultural, historic, built and palaeontological sites within the proposed development area;
- Evaluate the potential impacts of construction and operation of the proposed development on archaeological, cultural, historical resources; built and palaeontological resources; and
- Recommend mitigation measures to ameliorate any negative impacts on areas of archaeological, cultural, historical, built and palaeontological importance.

The purpose of this study is to determine the possible occurrence of sites with cultural heritage significance within the study area. The study is based on archival and document combined with fieldwork investigations.

Findings and Recommendations

The study areas, located on Eshowe 8739, were investigated during a field visit and through archival studies. The study area no.'s 1 to 7 were found to be devoid of any heritage sites with significance.

Study area 8 contained one area with obvious demarcation with hedges and one line of fencing. It is a small square area of around 5400m² and it contains a dilapidated building in the centre. The site strongly resembles a Muslim cemetery, and the remains of the building is painted in the light blue and white characteristic of other Muslim structures in the area. The site has also been specifically avoided during the sugarcane farming. Since Muslim graves are not marked on the surface this possibility could not be confirmed, however it is still recommended that the site undergoes a second phase of investigation before any development on it commences.

It is recommended that obscured, subterranean sites be managed, if they are encountered.

Some key features were located outside the boundaries of the study areas (3 respective cemeteries, Cetshwayo's Grave, forts and ruins). These will not be affected by the proposed development.

Fatal Flaws

No fatal flaws were identified.

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ABBREVIATIONS

Abbreviation	Meaning
BP	Before Present
c.	circa
BCE	Before the Common Era
Bp	Before Present
CE	Common Era
ECO	Environmental Control Officer
EIA	Early Iron Age
ELO	Environmental Liaison Officer
ESA	Early Stone Age
ESMS	Environmental and Social Management System
ESSS	Environmental and Social Safeguard Standards
Fm	Femtometre (10^{-15} m)
GPS	Geographic Positioning System
HIA	Heritage Impact Assessment
ICP	Informed Consultation and Participation
KZN	Kwa-Zulu Natal
LIA	Late Iron Age
LSA	Late Stone Age
MSA	Middle Stone Age
MYA	Million Years Ago
NHRA	National Heritage Resources Agency
PHRA	Provincial Heritage Resources Agency
PIA	Palaeontological Impact Assessment
PS	Performance Standard
SAHRA	South African Heritage Resource Agency
SAHRIS	South African Heritage Information System
SAPS	South African Police Service
SHE	Safety, Health and Environment
SHEQ	Safety, Health, Environment and Quality
S&EIR	Scoping and Environmental Impact Reporting
Um	Micrometre (10^{-6} m)
WGS 84	World Geodetic System for 1984

GLOSSARY OF TERMS

'Archaeological' means:

- a) Material remains resulting from human activity which are in a state of disuse and are in or on land and are older than 100 years, including artefacts, human and hominid remains and artificial features and structures;
- b) Rock art, being a form of painting, engraving or other graphic representation on a fixed rock surface or loose rock or stone, which was executed by human agency and is older than 100 years including any area within 10 m of such representation; and
- c) Wrecks, being any vessel or aircraft, or any part thereof, which was wrecked in South Africa, whether on land or in the maritime cultural zone referred to in section 5 of the Maritime Zones Act 1994 (Act 15 of 1994), and any cargo, debris or artefacts found or associated therewith, which are older than 60 years or which in terms of national legislation are considered to be worthy of conservation;
- d) Features, structures and artefacts associated with military history which are older than 75 years and the sites on which they are found.

'Circa' is used in front of a particular year to indicate an approximate date.

'Grave' means a place of interment and includes the contents, headstone or other marker of and any other structures on or associated with such place. The South African Heritage Resources Agency (SAHRA) will only issue a permit for the alteration of a grave if it is satisfied that every reasonable effort has been made to contact and obtain permission from the families concerned.

'Paleontological' means any fossilised remains or fossil trace of animals or plants which lived in the geological past, other than fossil fuels or fossiliferous rock intended for industrial use, and any site which contains such fossilised remains or trace.

A **'place'** is defined as:

- a) A site, area or region;
- b) A building or other structure (which may include equipment, furniture, fittings and articles associated with or connected with such building or other structure);
- c) A group of buildings or other structures (which may include equipment, furniture, fittings and articles associated with or connected with such group of buildings or other structures); and (d) an open space, including a public square, street or park; and in relation to the management of a place, includes the immediate surroundings of a place.

'Structures' means any building, works, device, or other facility made by people and which is fixed to land and any fixtures, fittings and equipment associated therewith older than 60 years.

1. General

1.1 Project Description

G&A Heritage was appointed by *Sidlubu Consulting* to undertake a Heritage Impact Assessment (HIA) for the proposed Mpushini Park Housing Development near Eshowe in the uMlalazi Local Municipality, King Cetshwayo District of the Kwa-Zulu Natal Province.

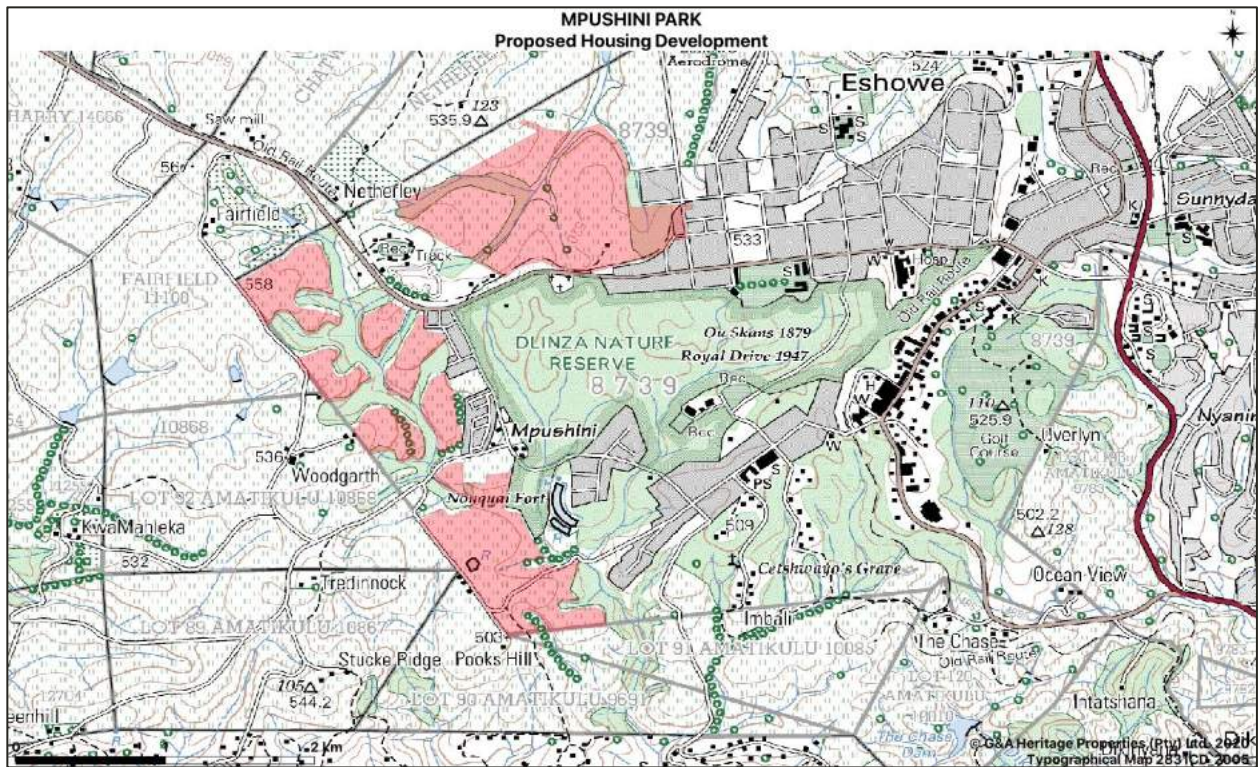


Figure 1. Proposed Mpushini Park Housing Development Project

The area under investigation is comprised of 8 study areas, totalling approximately 220 ha.

- Study area 1: 19.4ha
- Study area 2: 6.1ha
- Study area 3: 8ha
- Study area 4: 9.1ha
- Study area 5: 10.3ha
- Study area 6: 8ha
- Study area 7: 54.1ha
- Study area 8: 105 ha



Figure 2. Numbered study areas

1.2 Technical Scope of HIA

This HIA focused only on the areas to be directly affected by the proposed development and is meant to deliver, evaluate and inform on the following aspects:

- (a) The identification and mapping of all heritage resources in the area affected;
- (b) An assessment of the significance of such resources in terms of the heritage assessment criteria set out in the relevant legal descriptions, development proponent requirements and as per international best practise approaches and charters;
- (c) An assessment of the impact of the development on such heritage resources;
- (d) 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;
- (e) The results of consultation with communities affected by the proposed development and other interested parties regarding the impact of the development on heritage resources;
- (f) If heritage resources will be adversely affected by the proposed development, the consideration of alternatives; and
- (g) Plans for mitigation of any adverse effects during and after the completion of the proposed development.

The following categories of heritage objects are considered.

Graves: Places of interment including the contents, headstone or other marker of and any other structures on or associated with such place. This may include any of the following:

- 1) Ancestral graves,
- 2) Royal graves and graves of traditional leaders
- 3) Graves of victims of conflict i.e. graves of important individuals
- 4) Historical graves and cemeteries older than 60 years

- 5) Other human remains, buried or otherwise.

The removal of graves is subject to the following procedures:

- Notification of the impending removals (using local language media and notices at the grave site);
- Consultation with individuals or communities related or known to the deceased;
- Satisfactory arrangements for the curation of human remains and / or headstones in a museum, where applicable;
- Procurement of a permit from the relevant controlling body;
- Appropriate arrangements for the exhumation (preferably by a suitably trained archaeologist) and re-interment (sometimes by a registered undertaker, in a formally proclaimed cemetery);
- Observation of rituals or ceremonies required by the families.

Movable objects: This includes objects such as historic or rare books and manuscripts, paintings, drawings, sculptures, statuettes and carvings; modern or historic religious items; historic costumes, jewellery and textiles; fragments of monuments or historic buildings; archaeological material; and natural history collections such as shells, flora, or minerals. Discoveries and access resulting from a project may increase the vulnerability of cultural objects to theft, trafficking or abuse. This may include any of the following:

- 1) Objects recovered from the soil or water including archaeological and paleontological objects and material, meteorites and rare geological specimens;
- 2) Ethnographic art and objects
- 3) Military objects
- 4) Objects of decorative art
- 5) Objects of fine art
- 6) Objects of scientific or technological interest
- 7) Books, records, documents, photographic positives and negatives, graphic, film or video material or sound recordings
- 8) Any other prescribed categories, but excluding any object made by a living person.

Protection of Historic Battlefields

Heritage “Places”: A ‘place’ is defined as:

- a) A site, area or region;
- b) A building or other structure (which may include equipment, furniture, fittings and articles associated with or connected with such building or other structure);
- c) A group of buildings or other structures (which may include equipment, furniture, fittings and articles associated with or connected with such group of buildings or other structures); and
- d) An open space, including a public square, street or park; and in relation to the management of a place, includes the immediate surroundings of a place.
- e) Traditional Buildings used in cultural ceremonies.

Heritage Structures: Refers to single or groups of architectural works found in urban or rural settings providing evidence of a particular civilisation, a significant development or a historic event. It includes groups of buildings, structures and open spaces constituting past or contemporary human settlements that are recognised as cohesive and valuable from an architectural, aesthetic, spiritual or socio-cultural perspective. This may also include any building, works, device, or other facility made by people and which is fixed to land and any fixtures, fittings and equipment associated therewith older than 60 years.

Archaeological Sites

Archaeological sites comprise any combination of structural remains, artefacts, human or ecological elements and may be located entirely beneath, partially above, or entirely above the land or water surface. Archaeological material may be found anywhere on the earth’s surface, singly or scattered over large areas. Such material includes burial areas, human remains, artefacts and fossils. Archaeological sites may include:

- a) Material remains resulting from human activity which are in a state of disuse and are in or on land and are older than 100 years, including artefacts, human and hominid remains and artificial features and structures;
- b) Rock art, being a form of painting, engraving or other graphic representation on a fixed rock surface or loose rock or stone, which was executed by human agency and is

- older than 100 years including any area within 10 m of such representation; and
- c) Wrecks, being any vessel or aircraft, or any part thereof, which was wrecked, whether on land or in the maritime cultural zone, and any cargo, debris or artefacts found or associated therewith, which are older than 60 years or which in terms of national legislation are considered to be worthy of conservation;
- d) Features, structures and artefacts associated with military history which are older than 75 years and the sites on which they are found.

Paleontological resources: Refers to any fossilised remains or fossil trace of animals or plants which lived in the geological past, other than fossil fuels or fossiliferous rock intended for industrial use, and any site which contains such fossilised remains or trace.

Sacred or Spiritual Sites: Refers to natural features with cultural significance, which may include sacred hills, mountains, landscapes, streams, rivers, waterfalls, caves and rocks; sacred trees or plants, groves and forests; carvings or paintings on exposed rock faces or in caves; and paleontological deposits of early human, animal or fossilised remains. This heritage may have significance to local community groups or minority populations.

1.3 Geographical / Spatial Scope of HIA

The geographic and spatial scope of the HIA centres on the proposed Mpushini Park Housing Development near Eshowe in the uMlalazi Local Municipality, King Cetshwayo District of the Kwa-Zulu Natal Province, comprising of 8 study areas.

Any sites within the directly impacted study areas that can be affected by the proposed development and, where known, are included in this report. Mitigation or secondary investigations take this footprint as the spatial parameters of the study area.



Figure 3. Location Map of the Proposed Mpushini Park Housing Development

1.4 GPS Track Path

The following image shows a plotting of the GPS track paths recorded during the fieldwork. Several files were combined, and this does not represent a single uninterrupted recording. GPX Files are available.

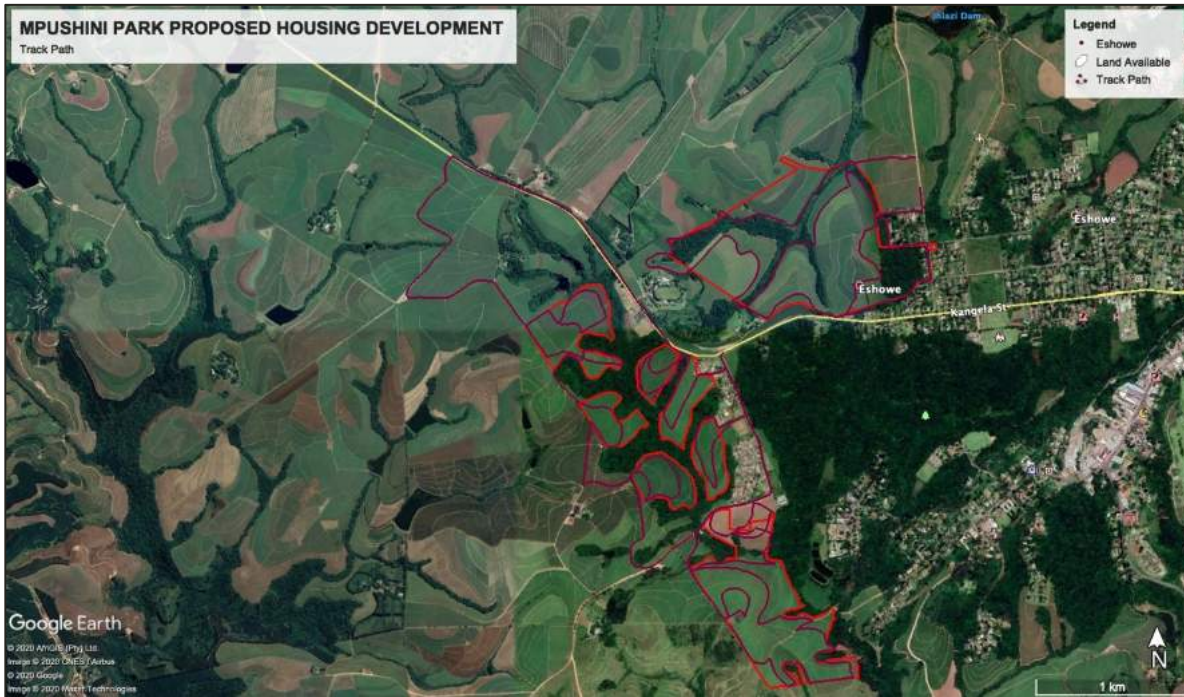


Figure 4. GPS Track Path

1.5 Temporal Scope

The proposed project will consist of three phases;

- 1) Planning
- 2) Development
- 3) Operational

Due to the nature of the proposed development, impacts on heritage sites are only anticipated during the development phase of the proposed project. The operational phase will not result in any further alterations to heritage on any significant scale.

2. Legislative Context

2.1 National Legislation

Section 38(1) of the South African Heritage Resources Act (25 of 1999) requires that a heritage study is undertaken for:

- (a) Construction of a road, wall, power line, pipeline, canal or other similar form of linear development or barrier exceeding 300 m in length;
- (b) 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 –
 - (1) Exceeding 10 000 m² in extent;
 - (2) Involving three or more existing erven or subdivisions thereof; or
 - (3) Involving three or more erven, or subdivisions thereof, which have been consolidated within the past five years; or
 - (d) The costs of which will exceed a sum set in terms of regulations; or
 - (e) Any other category of development provided for in regulations.

While the above describes the parameters of developments that fall under this Act., Section 38 (8) of the NHRA is applicable to this development. This section states that;

- (8) *The provisions of this section do not apply to a development as described in subsection (1) if an evaluation of the impact of such development on heritage resources is required in terms of the Environment Conservation Act, 1989 (Act 73 of 1989), or the integrated environmental management guidelines issued by the Department of Environment Affairs and Tourism, or the Minerals Act, 1991 (Act 50 of 1991), or any other legislation: Provided that the consenting authority must ensure that the evaluation fulfils the requirements of the relevant heritage resources authority in terms of subsection (3), and any comments and recommendations of the relevant heritage resources authority with regard to such development have been taken into account prior to the granting of the consent.*

In regard to a development such as this that falls under Section 38 (8) of the NHRA, the requirements of Section 38 (3) applies to the subsequent reporting, stating that;

- (3) *The responsible heritage resources authority must specify the information to be provided in a report required in terms of subsection (2) (a): Provided that the following must be included:*
 - (a) *The identification and mapping of all heritage resources in the area affected;*
 - (b) *An assessment of the significance of such resources in terms of the heritage assessment criteria set out in section 6 (2) or prescribed under section 7;*
 - (c) *An assessment of the impact of the development on such heritage resources;*
 - (d) *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;*
 - (e) *The results of consultation with communities affected by the proposed development and other interested parties regarding the impact of the development on heritage resources;*
 - (f) *If heritage resources will be adversely affected by the proposed development, the consideration of alternatives; and*
 - (g) *Plans for mitigation of any adverse effects during and after the completion of the proposed development.*
 - (1) Ancestral graves,
 - (2) Royal graves and graves of traditional leaders,
 - (3) Graves of victims of conflict (iv) graves of important individuals,
 - (4) Historical graves and cemeteries older than 60 years, and
 - (5) Other human remains which are not covered under the Human Tissues Act, 1983 (Act No.65 of 1983 as amended);
 - (h) *Movable objects, including ;*
 - (1) *Objects recovered from the soil or waters of South Africa including archaeological and paleontological objects and material, meteorites and rare geological specimens;*
 - (2) *Ethnographic art and objects;*
 - (3) *Military objects;*

- (4) Objects of decorative art;
- (5) Objects of fine art;
- (6) Objects of scientific or technological interest;
- (7) Books, records, documents, photographic positives and negatives, graphic, film or video material or sound recordings; and
- (8) Any other prescribed categories, but excluding any object made by a living person;
- (i) Battlefields;
- (j) Traditional building techniques.

A **'place'** is defined as:

- a) A site, area or region;
- b) A building or other structure (which may include equipment, furniture, fittings and articles associated with or connected with such building or other structure);
- c) A group of buildings or other structures (which may include equipment, furniture, fittings and articles associated with or connected with such group of buildings or other structures); and (d) an open space, including a public square, street or park; and in relation to the management of a place, includes the immediate surroundings of a place.

'Structures' means any building, works, device, or other facility made by people and which is fixed to land and any fixtures, fittings and equipment associated therewith older than 60 years.

'Archaeological' means:

- a) Material remains resulting from human activity which are in a state of disuse and are in or on land and are older than 100 years, including artefacts, human and hominid remains and artificial features and structures;
- b) Rock art, being a form of painting, engraving or other graphic representation on a fixed rock surface or loose rock or stone, which was executed by human agency and is older than 100 years including any area within 10 m of such representation; and
- c) Wrecks, being any vessel or aircraft, or any part thereof, which was wrecked in South Africa, whether on land or in the maritime cultural zone referred to in section 5 of the Maritime Zones Act 1994 (Act 15 of 1994), and any cargo, debris or artefacts found or associated therewith, which are older than 60 years or which in terms of national legislation are considered to be worthy of conservation;
- d) Features, structures and artefacts associated with military history which are older than 75 years and the sites on which they are found.

'Paleontological' means any fossilised remains or fossil trace of animals or plants which lived in the geological past, other than fossil fuels or fossiliferous rock intended for industrial use, and any site which contains such fossilised remains or trace.

'Grave' means a place of interment and includes the contents, headstone or other marker of and any other structures on or associated with such place. The South African Heritage Resources Agency (SAHRA) will only issue a permit for the alteration of a grave if it is satisfied that every reasonable effort has been made to contact and obtain permission from the families concerned.

The removal of graves is subject to the following procedures as outlined by the SAHRA:

- Notification of the impending removals (using English, Afrikaans and local language media and notices at the grave site);
- Consultation with individuals or communities related or known to the deceased;
- Satisfactory arrangements for the curation of human remains and / or headstones in a museum, where applicable;
- Procurement of a permit from the SAHRA;
- Appropriate arrangements for the exhumation (preferably by a suitably trained archaeologist) and re-interment (sometimes by a registered undertaker, in a formally proclaimed cemetery);
- Observation of rituals or ceremonies required by the families.

The limitations and assumptions associated with this heritage impact assessment are as follows;

- Field investigations were performed on foot and by vehicle where access was readily available.
- Sites were evaluated by means of description of the cultural landscape, direct observations and analysis of written sources and available databases.
- It was assumed that the site layout as provided by the consultant is accurate.

- We assumed that the public participation process performed as part of the Basic Assessment process was sufficiently encompassing not to be repeated in the Heritage Assessment Phase.

Table 1. Impacts on the NHRA Sections

Act	Section	Description	Possible Impact	Action
National Heritage Resources Act (NHRA)	34	Preservation of buildings older than 60 years	No impact	None
	35	Archaeological, paleontological and meteor sites	No impact	None
	36	Graves and burial sites	No impact	None
	37	Protection of public monuments	No impact	None
	38	Does activity trigger a HIA?	Yes	HIA

Table 2. NHRA Triggers

Action Trigger	Yes/No	Description
Construction of a road, wall, power line, pipeline, canal or other linear form of development or barrier exceeding 300m in length.	No	N/A
Construction of a bridge or similar structure exceeding 50m in length.	No	N/A
Development exceeding 5000 m ²	Yes	Proposed Mpushini Park Housing Development
Development involving more than 3 erven or sub divisions	No	N/A
Development involving more than 3 erven or sub divisions that have been consolidated in the past 5 years	No	N/A
Re-zoning of site exceeding 10 000 m ²	No	N/A
Any other development category, public open space, squares, parks or recreational grounds	No	N/A

3. Methodology

3.1 Heritage Management

This study defines the heritage component of the EIA process being undertaken for the proposed Mpushini Park Housing Development near Eshowe in the uMlalazi Local Municipality, King Cetshwayo District of the Kwa-Zulu Natal Province.

It is described as a first phase (HIA). This report attempts to evaluate both the accumulated heritage knowledge of the area and information derived from direct physical observations.

3.2 Inventory

Inventory studies involve the in-field survey and recording of archaeological resources within a proposed development area. The nature and scope of this type of study is defined primarily by the results of the overview study. In the case of site-specific developments, direct implementation of an inventory study may preclude the need for an overview.

There are a number of different methodological approaches to conducting inventory studies. Therefore, the proponent, in collaboration with the archaeological consultant, must develop an inventory plan for review and approval by the SAHRA prior to implementation (*Dincause, Dena F., H. Martin Wobst, Robert J. Hasenstab and David M. Lacy 1984*).

3.3 Evaluating Heritage Impacts

A combination of document research as well as the determination of the geographic suitability of areas and the evaluation of aerial photographs determined which areas could and should be accessed.

After plotting of the site on a GPS the areas were accessed using suitable combinations of vehicle access and access by foot.

Sites were documented by digital photography and geo-located with GPS readings using the WGS 84 datum. An aerial drone was used to evaluate the site from different heights and to improve coverage of the area.

Further techniques (where possible) included interviews with local inhabitants, visiting local museums and information centers and discussions with local experts. All this information was combined with information from an extensive literature study as well as the result of archival studies based on the SAHRA (South African Heritage Resource Agency) provincial databases.

This Heritage Impact Assessment relies on the analysis of written documents, maps, aerial photographs and other archival sources combined with the results of site investigations and interviews with effected people. Site investigations are not exhaustive and often focus on areas such as river confluence areas, elevated sites or occupational ruins.

The following documents were consulted in this study;

- South African National Archive Documents
- SAHRIS (South African Heritage Resources Information System) Database of Heritage Studies
- Historic Maps
- 1964, 1992 and 2005 Surveyor General Topographic Map series
- 1952 1:10 000 aerial photo survey
- Google Earth 2020 imagery
- Published articles and books
- JSTOR Article Archive

3.4 Site Visit / Fieldwork Details

Fieldwork for the HIA was done on the 29th of July and 24th of November 2020. Most of the areas were found to be accessible by foot. Vehicular access was possible in most areas. Areas of possible significance were investigated on foot. The survey was tracked using GPS and a track file in GPX format is available on request.

Where sites were identified it was documented photographically and plotted using GPS with the WGS 84 datum point as reference. GPX files are available on request from G&A Heritage.

The study area was surveyed using standard archaeological surveying methods. The area was surveyed using directional parameters supplied by the GPS and surveyed by vehicle and on foot. This technique has proven to result in the maximum coverage of an area.

Standard archaeological documentation formats were employed in the description of sites. Using standard site documentation forms as comparable medium, it enabled the surveyors to evaluate the relative importance of sites found. Furthermore, GPS (Global Positioning System) readings of all finds and sites were taken. This information was then plotted using a **Garmin Colorado** GPS (WGS 84- datum).

Indicators such as surface finds, plant growth anomalies, local information and topography were used in identifying sites of possible archaeological importance. Test probes were done at intervals to determine sub-surface occurrence of archaeological material. The importance of sites was assessed by comparisons with published information as well as comparative collections.

Test excavation is that form of archaeological excavation where the purpose is to establish the nature and extent of archaeological deposits and features present in a location, which it is proposed to develop (though not normally to fully investigate those deposits or features) and allow an assessment to be made of the archaeological impact of the proposed development. It may also be referred to as archaeological testing' (DAHGI 1999a, 27).

'Test excavation should not be confused with, or referred to as, archaeological assessment which is the overall process of assessing the archaeological impact of development. Test excavation is one of the techniques in carrying out archaeological assessment which may also include, as appropriate, documentary research, field walking, examination of upstanding or visible features or structures, examination of aerial photographs, satellite or other remote sensing imagery, geophysical survey, and topographical assessment' (DAHGI 1999b, 18).

3.5 Consultations

Signage indicating the HIA performed and the planned development actions were placed on site. The heritage component will be included in the larger ESIA advertisements placed by the lead consultant.

The following institutions were identified as possibly being impacted upon by the development;

- Netherly Showgrounds
- Eshowe Community Action Group
- South African Military History Society
- Billion Graves Organisation
- Battlefield Routes Society
- Dlinza Forest Nature Reserve

3.6 Assumptions

It was assumed that the impacted areas will be limited to the proposed development. It is furthermore assumed that the *PaleoSensitivity* Map provided on the SAHRIS platform is comprehensive enough to inform on actions in this regard.

3.7 Gaps / Limitations / Uncertainty

The area was readily accessible. The current layout indicates 8 study areas.

Due to the intensive cultivation of sugar cane in the study areas, it was difficult to make surface observations of heritage deposits. It is uncertain whether or not the agricultural activities has damaged or obliterated any heritage sites that may have occurred there previously.

3.8 Specialist Specific Methodology

The scope of work includes:

- the identification and assessment of archaeological, cultural, historic, built and paleontological sites within the study area.
- Archival study of existing data and information for the study area.
- Site inspection and fieldwork.
- This site work includes communicating with local inhabitants to confirm possible locations of heritage and cultural sites.
- Impact assessment has been performed according to the methodology as described in the relevant Section.

3.9 Impact Assessment Methodology

Degrees of Significance – Significance Criteria

There are several kinds of significance, including scientific, public, ethnic, historic and economic, that need to be taken into account when evaluating heritage resources. For any site, explicit criteria are used to measure these values. Innovative approaches to site evaluation which emphasize quantitative analysis and objectivity are encouraged. The process used to derive a measure of relative site significance must be rigorously documented, particularly the system for ranking or weighting various evaluated criteria.

Site integrity, or the degree to which a heritage site has been impaired or disturbed as a result of past land alteration, is an important consideration in evaluating site significance. In this regard, it is important to recognize that although an archaeological site has been disturbed, it may still contain important scientific information.

Heritage resources may be of scientific value in two respects. The potential to yield information, which, if properly recovered, will enhance understanding of Southern African human history, is one appropriate measure of scientific significance. In this respect, archaeological sites should be evaluated in terms of their potential to resolve current archaeological research problems. Scientific significance also refers to the potential for relevant contributions to other academic disciplines or to industry.

Public significance refers to the potential a site has for enhancing the public's understanding and appreciation of the past. The interpretive, educational and recreational potential of a site are valid indications of public value. Public significance criteria such as ease of access, land ownership, or scenic setting are often external to the site itself. The relevance of heritage resource data to private industry may also be interpreted as a particular kind of public significance.

Ethnic significance applies to heritage sites which have value to an ethnically distinct community or group of people. Determining the ethnic significance of an archaeological site may require consultation with persons having special knowledge of a particular site. It is essential that ethnic significance be assessed by someone properly trained in obtaining and evaluating such data.

Historic archaeological sites may relate to individuals or events that made an important, lasting contribution to the development of a particular locality or the province. Historically important sites also reflect or commemorate the historic socioeconomic character of an area. Sites having high historical value will also usually have high public value.

The economic or monetary value of a heritage site, where calculable, is also an important indication of significance. In some cases, it may be possible to project monetary benefits derived from the public's use of a heritage site as an educational or recreational facility. This may be accomplished by employing established economic evaluation methods; most of which have been developed for valuating outdoor recreation. The objective is to determine the willingness of users, including local residents and tourists, to pay for the experiences or services the site provides even though no payment is presently being made. Calculation of user benefits will normally require some study of the visitor population (*Smith, L.D. 1977*).

- **Rarity**
 - It possesses uncommon, rare or endangered aspects of natural or cultural heritage.
 - Importance for rare, endangered or uncommon structures, landscapes or phenomena.
- **Representivity**
 - It is important in demonstrating the principal characteristics of a particular class of natural or cultural places or objects.
 - Importance in demonstrating the principal characteristics of a range of landscapes or environments, the attributes of which identify it as being characteristic of its class.
 - Importance in demonstrating the principal characteristics of human activities (including way of life, philosophy, custom, process, land-use, function, design or technique) in the environment of the nation, province, region or locality.

The table below illustrates how a site's heritage significance is determined

Table 3. Site's Heritage Significance

Spheres of Significance	High	Medium	Low
International			
National			
Provincial			
Regional			
Local			
Specific Community			

4. Assessment of Heritage Potential

4.1 Assessment Matrix

4.1.1 Determining Archaeological Significance

In addition to guidelines provided by the National Heritage Resources Act (Act No. 25 of 1999), a set of criteria based on Deacon (J) and Whitelaw (1997) for assessing archaeological significance has been developed for Eastern Cape settings (Morris 2007a). These criteria include estimation of landform potential (in terms of its capacity to contain archaeological traces) and assessing the value to any archaeological traces (in terms of their attributes or their capacity to be construed as evidence, given that evidence is not given but constructed by the investigator).

Estimating site potential

Table 4 (below) is a classification of landforms and visible archaeological traces used for estimating the potential of archaeological sites (after J. Deacon and, National Monuments Council). Type 3 sites tend to be those with higher archaeological potential, but there are notable exceptions to this rule, for example the renowned rock engravings site Driekopseiland near Kimberley which is on landform L1 Type 1 – normally a setting of lowest expected potential. It should also be noted that, generally, the older a site the poorer the preservation, so that sometimes any trace, even of only Type 1 quality, could be of exceptional significance. In light of this, estimation of potential will always be a matter for archaeological observation and interpretation.

Table 4. Classification of landforms and visible archaeological traces for estimating the potential for archaeological sites (after J. Deacon, NMC as used in Morris)

Class	Landform	Type 1	Type 2	Type 3
L1	Rocky Surface	Bedrock exposed	Some soil patches	Sandy/grassy patches
L2	Ploughed land	Far from water	In floodplain	On old river terrace
L3	Sandy ground, inland	Far from water	In floodplain or near features such as hill/dune	On old river terrace
L4	Sandy ground, coastal	>1 km from sea	Inland of dune cordon	Near rocky shore
L5	Water-logged deposit	Heavily vegetated	Running water	Sedimentary basin
L6	Developed urban	Heavily built-up with no known record of early settlement	Known early settlement, but buildings have basements	Buildings without extensive basements over known historical sites
L7	Lime/dolomite	>5 myrs	<5000 yrs	Between 5000 yrs and 5 myrs
L8	Rock shelter	Rocky floor	Loping floor or small area	Flat floor, high ceiling
Class	Archaeological traces	Type 1	Type 2	Type 3
A1	Area previously excavated	Little deposit remaining	More than half deposit remaining	High profile site
A2	Shell of bones visible	Dispersed scatter	Deposit <0.5 m thick	Deposit >0.5 m thick; shell and bone dense
A3	Stone artefacts or stone walling or other feature visible	Dispersed scatter	Deposit <0.5m thick	Deposit >0.5 m thick

Table 5. Site attributes and value assessment (adopted from Whitelaw 1997 as used in Morris)

Class	Landforms	Type 1	Type 2	Type 3
1	Length of sequence /context	No sequence Poor context Dispersed distribution	Limited sequence	Long sequence Favourable context High density of arte / ecofacts

2	Presence of exceptional items (incl. regional rarity)	Absent	Present	Major element
3	Organic preservation	Absent	Present	Major element
4	Potential for future archaeological investigation	Low	Medium	High
5	Potential for public display	Low	Medium	High
6	Aesthetic appeal	Low	Medium	High
7	Potential for implementation of a long-term management plan	Low	Medium	High

4.2 Assessing site value by attribute

Table 5 is adapted from Whitelaw (1997), who developed an approach for selecting sites meriting heritage recognition status in KwaZulu-Natal. It is a means of judging a site's archaeological value by ranking the relative strengths of a range of attributes (given in the second column of the table). While aspects of this matrix remain qualitative, attribute assessment is a good indicator of the general archaeological significance of a site, with Type 3 attributes being those of highest significance.

4.3 Impact Statement

4.3.1 Assessment of Impacts

A heritage resource impact may be broadly defined as the net change between the integrity of a heritage site with and without the proposed development. This change may be either beneficial or adverse.

Beneficial impacts occur wherever a proposed development actively protects, preserves or enhances a heritage resource. For example, development may have a beneficial effect by preventing or lessening natural site erosion. Similarly, an action may serve to preserve a site for future investigation by covering it with a protective layer of fill. In other cases, the public or economic significance of an archaeological site may be enhanced by actions, which facilitate non-destructive public use. Although beneficial impacts are unlikely to occur frequently, they should be included in the assessment.

More commonly, the effects of a project on heritage sites are of an adverse nature. Adverse impacts occur under conditions that include:

- a) destruction or alteration of all or part of a heritage site;
- b) isolation of a site from its natural setting; and
- c) introduction of physical, chemical or visual elements that are out-of-character with the heritage resource and its setting.

Adverse effects can be more specifically defined as direct or indirect impacts. Direct impacts are the immediately demonstrable effects of a project which can be attributed to particular land modifying actions. They are directly caused by a project or its ancillary facilities and occur at the same time and place. The immediate consequences of a project action, such as slope failure following reservoir inundation, are also considered direct impacts.

Indirect impacts result from activities other than actual project actions. Nevertheless, they are clearly induced by a project and would not occur without it. For example, project development may induce changes in land use or population density, such as increased urban and recreational development, which may indirectly impact upon heritage sites. Increased vandalism of heritage sites, resulting from improved or newly introduced access, is also considered an indirect impact. Indirect impacts are much more difficult to assess and quantify than impacts of a direct nature.

Once all project related impacts are identified, it is necessary to determine their individual level-of-effect on heritage resources. This assessment is aimed at determining the extent or degree to which future opportunities for scientific research, preservation, or public appreciation are foreclosed or otherwise adversely affected by a proposed action. Therefore, the assessment provides a reasonable indication of the relative significance or importance of a particular impact. Normally, the assessment should follow site evaluation since it is important to know what heritage values may be adversely affected.

The assessment should include careful consideration of the following level-of-effect indicators, which are defined below:

- magnitude
- severity
- duration
- range
- frequency
- diversity
- cumulative effect
- rate of change

4.4 Indicators of Impact Severity

Magnitude

The amount of physical alteration or destruction, which can be expected. The resultant loss of heritage value is measured either in amount or degree of disturbance.

Severity

The irreversibility of an impact. Adverse impacts, which result in a totally irreversible and irretrievable loss of heritage value, are of the highest severity.

Duration

The length of time an adverse impact persists. Impacts may have short-term or temporary effects, or conversely, more persistent, long-term effects on heritage sites.

Range

The spatial distribution, whether widespread or site-specific, of an adverse impact.

Frequency

The number of times an impact can be expected. For example, an adverse impact of variable magnitude and severity may occur only once. An impact such as that resulting from cultivation may be of recurring or on-going nature.

Diversity

The number of different kinds of project-related actions expected to affect a heritage site.

Cumulative Effect

A progressive alteration or destruction of a site owing to the repetitive nature of one or more impacts.

Rate of Change

The rate at which an impact will effectively alter the integrity or physical condition of a heritage site. Although an important level-of-effect indicator, it is often difficult to estimate. Rate of change is normally assessed during or following project construction.

The level-of-effect assessment should be conducted and reported in a quantitative and objective fashion. The methodological approach, particularly the system of ranking level-of-effect indicators, must be rigorously documented and recommendations should be made with respect to managing uncertainties in the assessment. (*Zubrow, Ezra B.A., 1984*).

4.4.1 Pre-Contact Sites

No Pre-Contact Sites could be identified within the study areas as a result of agricultural activities.

4.4.2 Post-Contact Sites

No Pre-Contact Sites could be identified within the study areas as a result of agricultural activities.

4.4.3 Built Environment

Approximately 15 ruins (*rondawels* and other brick buildings) were identified on the western border of the study area no. 7. These were built with bricks and mortar and are not indicated on the 1964

topographical map. It can thus be assumed that these buildings are not older than 60 years which puts them outside of the mandate of the NHRA 25 of 1999.



Figure 5. Built Environment



Figure 6. Built Environment

The residential dwellings along Oftebro Street within study area 8.



Figure 7. Examples of residential dwellings along Oftebro Street



Figure 8. Examples of residential dwellings along Oftebro Street



Figure 9. Examples of residential dwellings along Oftebro Street

Historic Significance

No	Criteria	Significance Rating
1	Are any of the identified sites or buildings associated with a historical person or group? No	N/A
2	Are any of the buildings or identified sites associated with a historical event? No	N/A
3	Are any of the identified sites or buildings associated with a religious, economic social or political or educational activity? No	N/A
4	Are any of the identified sites or buildings of archaeological significance? No	N/A
5	Are any of the identified buildings or structures older than 60 years? No	N/A

Architectural Significance

No	Criteria	Rating
1	Are any of the buildings or structures an important example of a building type? No	N/A
2	Are any of the buildings outstanding examples of a particular style or period? No	N/A
3	Do any of the buildings contain fine architectural details and reflect exceptional craftsmanship? No	N/A
4	Are any of the buildings an example of an industrial, engineering or technological development? No	N/A

5	What is the state of the architectural and structural integrity of the building? No	N/A
6	Is the building's current and future use in sympathy with its original use (for which the building was designed)? N/A	-
7	Were the alterations done in sympathy with the original design? N/A	-
8	Were the additions and extensions done in sympathy with the original design? N/A	-
9	Are any of the buildings or structures the work of a major architect, engineer or builder? No.	N/A

Spatial Significance

Even though each building needs to be evaluated as a single artefact the site still needs to be evaluated in terms of its significance in its geographic area, city, town, village, neighbourhood or precinct. This set of criteria determines the spatial significance.

No	Criteria	Rating
1	Can any of the identified buildings or structures be considered a landmark in the town or city? No	-
2	Do any of the buildings contribute to the character of the neighborhood? No	-
3	Do any of the buildings contribute to the character of the square or streetscape? No	-
4	Do any of the buildings form part of an important group of buildings? No	-

5. Impact Evaluation

This HIA Methodology assists in evaluating the overall effect of a proposed activity on the heritage environment. The determination of the effect of a heritage impact on a heritage parameter is determined through a systematic analysis of the various components of the impact. This is undertaken using information that is available to the heritage practitioner through the process of heritage impact assessment. The impact evaluation of predicted impacts was undertaken through an assessment of the significance of the impacts.

5.1 Determination of Significance of Impacts

Significance is determined through a synthesis of impact characteristics, which include context and intensity of an impact. Context refers to the geographical scale i.e. site, local, national or global whereas intensity is defined by the severity of the impact e.g. the magnitude of deviation from background conditions, the size of the area affected, the duration of the impact and the overall probability of occurrence.

Significance is an indication of the importance of the impact in terms of both physical extent and time scale, and therefore indicates the level of mitigation required. The total number of points scored for each impact indicates the level of significance of the impact.

5.2 Impact Rating System

Impact assessment must take account of the nature, scale and duration of effects on the heritage environment whether such effects are positive (beneficial) or negative (detrimental). Each issue / impact is also assessed according to the project stages:

- planning
- construction
- operation
- decommissioning

Where necessary, the proposal for mitigation or optimisation of an impact will be detailed. A brief discussion of the impact and the rationale behind the assessment of its significance has also been included.

5.2.1 Rating System Used to Classify Impacts

The rating system is applied to the potential impact on the receiving environment and includes an objective evaluation of the mitigation of the impact. Impacts have been consolidated into one rating. In assessing the significance of each issue, the following criteria (including an allocated point system) is used:

NATURE		
Including a brief description of the impact of the heritage parameter being assessed in the context of the project. This criterion includes a brief written statement of the heritage aspect being impacted upon by a particular action or activity.		
GEOGRAPHICAL EXTENT		
This is defined as the area over which the impact will be expressed. Typically, the severity and significance of an impact have different scales and as such bracketing ranges are often required. This is often useful during the detailed assessment of a project in terms of further defining the determined.		
1	Site	The impact will only affect the site.
2	Local/district	Will affect the local area or district.
3	Province/region	Will affect the entire province or region.
4	International and National	Will affect the entire country.
PROBABILITY		
This describes the chance of occurrence of an impact		
1	Unlikely	The chance of the impact occurring is extremely low (Less than a 25% chance of occurrence).

2	Possible	The impact may occur (Between a 25% to 50% chance of occurrence).
3	Probable	The impact will likely occur (Between a 50% to 75% chance of occurrence).
4	Definite	Impact will certainly occur (Greater than a 75% chance of occurrence).
REVERSIBILITY		
This describes the degree to which an impact on a heritage parameter can be successfully reversed upon completion of the proposed activity.		
1	Completely reversible	The impact is reversible with implementation of minor mitigation measures.
2	Partly reversible	The impact is partly reversible but more intense mitigation measures are required.
3	Barely reversible	The impact is unlikely to be reversed even with intense mitigation measures.
4	Irreversible	The impact is irreversible and no mitigation measures exist.
IRREPLACEABLE LOSS OF RESOURCES		
This describes the degree to which heritage resources will be irreplaceably lost as a result of a proposed activity.		
1	No loss of resource.	The impact will not result in the loss of any resources.
2	Marginal loss of resource	The impact will result in marginal loss of resources.
3	Significant loss of resources	The impact will result in significant loss of resources.
4	Complete loss of resources	The impact is result in a complete loss of all resources.
DURATION		
This describes the duration of the impacts on the heritage parameter. Duration indicates the lifetime of the impact as a result of the proposed activity.		
1	Short term	The impact and its effects will either disappear with mitigation or will be mitigated through natural process in a span shorter than the construction phase (0 – 1 years), or the impact and its effects will last for the period of a relatively short construction period and a limited recovery time after construction, thereafter it will be entirely negated (0 – 2 years).
2	Medium term	The impact and its effects will continue or last for some time after the construction phase but will be mitigated by direct human action or by natural processes thereafter (2 – 10 years).
3	Long term	The impact and its effects will continue or last for the entire operational life of the development but will be mitigated by direct human action or by natural processes thereafter (10 – 50 years).
4	Permanent	The only class of impact that will be non-transitory. Mitigation either by man or natural process will not occur in such a way or such a time span that the impact can be considered transient (Indefinite).
CUMULATIVE EFFECT		
This describes the cumulative effect of the impacts on the heritage parameter. A cumulative effect/impact is an effect, which in itself may not be significant but may become significant if added to other existing or potential impacts emanating from other similar or diverse activities as a result of the project activity in question.		
1	Negligible Cumulative Impact	The impact would result in negligible to no cumulative effects.

2	Low Cumulative Impact	The impact would result in insignificant cumulative effects.
3	Medium Cumulative impact	The impact would result in minor cumulative effects.
4	High Cumulative Impact	The impact would result in significant cumulative effects.
INTENSITY / MAGNITUDE		
Describes the severity of an impact.		
1	Low	Impact affects the quality, use and integrity of the system/component in a way that is barely perceptible.
2	Medium	Impact alters the quality, use and integrity of the system/component but system/ component still continues to function in a moderately modified way and maintains general integrity (some impact on integrity).
3	High	Impact affects the continued viability of the system/component and the quality, use, integrity and functionality of the system or component is severely impaired and may temporarily cease. High costs of rehabilitation and remediation.
4	Very high	Impact affects the continued viability of the system/component and the quality, use, integrity and functionality of the system or component permanently ceases and is irreversibly impaired (system collapse). Rehabilitation and remediation often impossible. If possible rehabilitation and remediation often unfeasible due to extremely high costs of rehabilitation and remediation.
SIGNIFICANCE		
Significance is determined through a synthesis of impact characteristics. Significance is an indication of the importance of the impact in terms of both physical extent and time scale, and therefore indicates the level of mitigation required. This describes the significance of the impact on the heritage parameter. The calculation of the significance of an impact uses the following formula:		
(Extent + probability + reversibility + irreplaceability + duration + cumulative effect) x magnitude/intensity.		
The summation of the different criteria will produce a non-weighted value. By multiplying this value with the magnitude/intensity, the resultant value acquires a weighted characteristic which can be measured and assigned a significance rating.		
Points	Impact Significance Rating	Description
6 to 28	Negative Low impact	The anticipated impact will have negligible negative effects and will require little to no mitigation.
6 to 28	Positive Low impact	The anticipated impact will have minor positive effects.
29 to 50	Negative Medium impact	The anticipated impact will have moderate negative effects and will require moderate mitigation measures.
29 to 50	Positive Medium impact	The anticipated impact will have moderate positive effects.
51 to 73	Negative High impact	The anticipated impact will have significant effects and will require significant mitigation measures to achieve an acceptable level of impact.
51 to 73	Positive High impact	The anticipated impact will have significant positive effects.
74 to 96	Negative Very high impact	The anticipated impact will have highly significant effects and are unlikely to be able to be mitigated adequately. These impacts could be considered "fatal flaws".
74 to 96	Positive Very high impact	The anticipated impact will have highly significant positive effects.

5.3 Assessing Visual Impact

Visual impacts of developments result when sites that are culturally celebrated are visually affected by a development. The exact parameters for the determination of visual impacts have not yet been rigidly defined and are still mostly open to interpretation. CNdV Architects and The Department of Environmental Affairs and Development Planning (2006) have developed some guidelines for the management of the visual impacts of wind turbines in the Western Cape, although these have not yet been formalised. In these guidelines they recommend a buffer zone of 1km around significant heritage sites to minimise the visual impact.

Due to the fact that the project will mainly involve sub-surface infrastructure it is not anticipated that any visual impacts will be encountered.

6. Assessment of Impacts

6.1 Impact Statement

6.1.1 Built Environment

Some structures associated with rural living were identified;

- Brick outbuildings (modern and historic)
- Barb-wire fences (modern)
- Dirt roads (modern)
- Footpaths

Mitigation

These structures will not be affected by the proposed development.

6.1.2 Cultural Landscape

The cultural landscape in the study area is strongly associated with organised sugar cane farming and indigenous coastal scarp forests, the most striking of which being the Dlinza Forest. In Eshowe town itself, there is still a strong community feeling with many colonial influences.



Figure 10. Sugar cane fields



Figure 11. Sugar cane fields



Figure 12. Sugar cane fields



Figure 13. Sugar cane fields



Figure 14. Sugar cane fields



Figure 15. Sugar cane fields



Figure 16. Dlinza forest (& catwalk)

Landscape Type	Description	Occurrence still possible?	Likely occurrence?
1 Paleontological	Mostly fossil remains. Remains include microbial fossils such as found in Baberton Greenstones	Yes, sub-surface	Unlikely

2 Archaeological	Evidence of human occupation associated with the following phases – Early-, Middle-, Late Stone Age, Early-, Late Iron Age, Pre-Contact Sites, Post-Contact Sites	Yes	Unlikely
3 Historic Built Environment	<ul style="list-style-type: none"> - Historical townscapes/streetscapes - Historical structures; i.e. older than 60 years - Formal public spaces - Formally declared urban conservation areas - Places associated with social identity/displacement 	No	No
4 Historic Farmland	<p>These possess distinctive patterns of settlement and historical features such as:</p> <ul style="list-style-type: none"> - Historical farm yards - Historical farm workers villages/settlements - Irrigation furrows - Tree alignments and groupings - Historical routes and pathways - Distinctive types of planting - Distinctive architecture of cultivation e.g. planting blocks, trellising, terracing, ornamental planting. 	No	No
5 Historic rural town	<ul style="list-style-type: none"> - Historic mission settlements - Historic townscapes 	No	No
6 Pristine natural landscape	<ul style="list-style-type: none"> - Historical patterns of access to a natural amenity - Formally proclaimed nature reserves - Evidence of pre-colonial occupation - Scenic resources, e.g. view corridors, viewing sites, visual edges, visual linkages - Historical structures/settlements older than 60 years - Pre-colonial or historical burial sites - Geological sites of cultural significance. 	No	No
7 Relic Landscape	<ul style="list-style-type: none"> - Past farming settlements - Past industrial sites - Places of isolation related to attitudes to medical treatment - Battle sites - Sites of displacement, 	No	No
8 Burial grounds and grave sites	<ul style="list-style-type: none"> - Pre-colonial burials (marked or unmarked, known or unknown) - Historical graves (marked or unmarked, known or unknown) - Graves of victims of conflict - Human remains (older than 100 years) - Associated burial goods (older than 100 years) - Burial architecture (older than 60 years) 	Yes	Unlikely
9 Associated Landscapes	<ul style="list-style-type: none"> - Sites associated with living heritage e.g. initiation sites, harvesting of natural resources for traditional medicinal purposes - Sites associated with displacement & contestation - Sites of political conflict/struggle - Sites associated with an historic event/person - Sites associated with public memory 	No	No

10 Historical Farmyard	<ul style="list-style-type: none"> - Setting of the yard and its context - Composition of structures - Historical/architectural value of individual structures - Tree alignments - Views to and from - Axial relationships - System of enclosure, e.g. defining walls - Systems of water reticulation and irrigation, e.g. furrows - Sites associated with slavery and farm labour - Colonial period archaeology 	No	No
11 Historic institutions	<ul style="list-style-type: none"> - Historical prisons - Hospital sites - Historical school/reformatory sites - Military bases 	No	No
12 Scenic visual	<ul style="list-style-type: none"> - Scenic routes 	No	No
13 Amenity landscape	<ul style="list-style-type: none"> - View sheds - View points - Views to and from - Gateway conditions - Distinctive representative landscape conditions - Scenic corridors 	No	No

7. Measuring Impacts

In 2003 the SAHRA (South African Heritage Resources Agency) compiled the following guidelines to evaluate the cultural significance of individual heritage resources:

- **Type of Resource**
 - Place
 - Archaeological Site
 - Structure
 - Grave
 - Palaeontological Feature
 - Geological Feature

- **Type of Significance**
 - Historic Value
 - Important in the community, or pattern of history
 - Important in the evolution of cultural landscapes and settlement patterns
 - Important in exhibiting density, richness or diversity of cultural features illustrating the human occupation and evolution of the nation, province, region or locality.
 - Important for association with events, developments or cultural phases that have had a significant role in the human occupation and evolution of the nation, province, region or community.
 - Important as an example for technical, creative, design or artistic excellence, innovation or achievement in a particular period.
 - It has strong or special association with the life or work of a person, group or organisation of importance in history
 - Importance for close associations with individuals, groups or organisations whose life, works or activities have been significant within the history of the nation, province, region or community.
 - It has significance relating to the history of slavery
 - Importance for a direct link to the history of slavery in South Africa.

 - Aesthetic Value
 - It is important in exhibiting particular aesthetic characteristics valued by a community or cultural group.
 - Important to a community for aesthetic characteristics held in high esteem or otherwise valued by the community.
 - Importance for its creative, design or artistic excellence, innovation or achievement.
 - Importance for its contribution to the aesthetic values of the setting demonstrated by a landmark quality or having impact on important vistas or otherwise contributing to the identified aesthetic qualities of the cultural environs or the natural landscape within which it is located.
 - In the case of an historic precinct, importance for the aesthetic character created by the individual components which collectively form a significant streetscape, townscape or cultural environment.

 - Scientific Value
 - It has potential to yield information that will contribute to an understanding of natural or cultural heritage
 - Importance for information contributing to a wider understanding of natural or cultural history by virtue of its use as a research site, teaching site, type locality, reference or benchmark site.
 - Importance for information contributing to a wider understanding of the origin of the universe or of the development of the earth.
 - Importance for information contributing to a wider understanding of the origin of life; the development of plant or animal species, or the biological or cultural development of hominid or human species.

- Importance for its potential to yield information contributing to a wider understanding of the history of human occupation of the nation, Province, region or locality.
- It is important in demonstrating a high degree of creative or technical achievement at a particular period
- Importance for its technical innovation or achievement.

a) Does the site contain evidence, which may substantively enhance understanding of culture history, culture process, and other aspects of local and regional prehistory?

- internal stratification and depth
- chronologically sensitive cultural items
- materials for absolute dating
- association with ancient landforms
- quantity and variety of tool type
- distinct intra-site activity areas
- tool types indicative of specific socio-economic or religious activity
- cultural features such as burials, dwellings, hearths, etc.
- diagnostic faunal and floral remains
- exotic cultural items and materials
- uniqueness or representativeness of the site
- integrity of the site

b) Does the site contain evidence which may be used for experimentation aimed at improving archaeological methods and techniques?

- monitoring impacts from artificial or natural agents
- site preservation or conservation experiments
- data recovery experiments
- sampling experiments
- intra-site spatial analysis

c) Does the site contain evidence which can make important contributions to paleo environmental studies?

- topographical, geomorphological context
- depositional character
- diagnostic faunal, floral data

d) Does the site contain evidence which can contribute to other scientific disciplines such as hydrology, geomorphology, pedology, meteorology, zoology, botany, forensic medicine, and environmental hazards research, or to industry including forestry and commercial fisheries?

○ Social Value / Public Significance

- It has strong or special association with a particular community or cultural group for social, cultural or spiritual reasons
- Importance as a place highly valued by a community or cultural group for reasons of social, cultural, religious, spiritual, symbolic, aesthetic or educational associations.
- Importance in contributing to a community's sense of place.

a) Does the site have potential for public use in an interpretive, educational or recreational capacity?

- integrity of the site
- technical and economic feasibility of restoration and development for public use
- visibility of cultural features and their ability to be easily interpreted
- accessibility to the public
- opportunities for protection against vandalism
- representativeness and uniqueness of the site
- aesthetics of the local setting

- proximity to established recreation areas
 - present and potential land use
 - land ownership and administration
 - legal and jurisdictional status
 - local community attitude toward development
- b) Does the site receive visitation or use by tourists, local residents or school groups?
- Ethnic Significance
Does the site presently have traditional, social or religious importance to a particular group or community?
- ethnographic or ethno-historic reference
 - documented local community recognition or, and concern for, the site
- Economic Significance
What value of user-benefits may be placed on the site?
- visitors' willingness-to-pay
 - visitors' travel costs
- Scientific Significance
- a) Does the site contain evidence, which may substantively enhance understanding of historic patterns of settlement and land use in a particular locality, regional or larger area?
 - b) Does the site contain evidence, which can make important contributions to other scientific disciplines or industry?
- Historic Significance
- a) Is the site associated with the early exploration, settlement, land use, or other aspect of southern Africa's cultural development?
 - b) Is the site associated with the life or activities of a particular historic figure, group, organization, or institution that has made a significant contribution to, or impact on, the community, province or nation?
 - c) Is the site associated with a particular historic event whether cultural, economic, military, religious, social or political that has made a significant contribution to, or impact on, the community, province or nation?
 - d) Is the site associated with a traditional recurring event in the history of the community, province, or nation, such as an annual celebration?
- Public Significance
- a) Does the site have potential for public use in an interpretive, educational or recreational capacity?
 - visibility and accessibility to the public
 - ability of the site to be easily interpreted
 - opportunities for protection against vandalism
 - economic and engineering feasibility of reconstruction, restoration and maintenance
 - representativeness and uniqueness of the site
 - proximity to established recreation areas
 - compatibility with surrounding zoning regulations or land use
 - land ownership and administration
 - local community attitude toward site preservation, development or destruction
 - present use of site
 - b) Does the site receive visitation or use by tourists, local residents or school groups?
- Other
- Is the site a commonly acknowledged landmark?
 - Does, or could, the site contribute to a sense of continuity or identity either alone or in conjunction with similar sites in the vicinity?

- Is the site a good typical example of an early structure or device commonly used for a specific purpose throughout an area or period of time?
- Is the site representative of a particular architectural style or pattern?

For each predicted impact, criteria are described. These criteria include the **magnitude** (size or degree scale), which also includes the **type** of impact, being either a positive or negative impact; the **duration** (temporal scale); and the **extent** (spatial scale), as well as the **probability** (likelihood). The methodology is quantitative and generated through a spreadsheet but requires professional judgement in the application of the criteria.

When assessing impacts, broader considerations are also considered, these include the **confidence** with which the assessment was undertaken, the **reversibility** of the impact and the resource **irreplaceability**.

Calculations
(as applied in the excel spreadsheet 'Mpushini Park Housing Development.xls')

For each predicted impact, certain criteria are applied to establish the likely **significance** of the impact, firstly in the case of no mitigation being applied and then with the most effective mitigation measure(s) in place.

These criteria include the **magnitude** (size or degree scale), which also includes the **type** of impact, being either a positive or negative impact; the **duration** (temporal scale); and the **extent** (spatial scale). These numerical ratings are used in an equation whereby the **consequence** of the impact can be calculated. Consequence is calculated as follows:

Consequence = type x (magnitude + duration + extent).

To calculate the significance of an impact, the **probability** (or likelihood) of that impact occurring is applied to the consequence.

Significance = consequence x probability

Depending on the numerical result, the impact would fall into a significance category as negligible, minor, moderate or major, and the type would be either positive or negative.

The following tables show the scales used to classify the above variables and define each of the rating categories.

7.1 Magnitude

The magnitude refers to the degree of alteration of the affected environmental receptor. The relevant descriptor for magnitude is selected by the user (refer to Table).

Table 6. Description of magnitude and assigned numerical values

Numerical Rating	Magnitude	
	Category	Descriptors
1	Negligible	Natural and/ or social functions and/ or processes are negligibly altered
2	Very low	Natural and/ or social functions and/ or processes are slightly altered
3	Low	Natural and/ or social functions and/ or processes are somewhat altered
4	Moderate	Natural and/ or social functions and/ or processes are moderately altered
5	High	Natural and/ or social functions and/ or processes are notably altered
6	Very high	Natural and/ or social functions and/ or processes are majorly altered

7	Extremely high	Natural and/ or social functions and/ or processes are severely altered
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*NOTE: Where applicable, the magnitude of the impact is related to a relevant standard or threshold or is based on specialist knowledge and understanding of that particular field.

7.2 Duration

The duration refers to the length of permanence of the impact on the environmental receptor. The relevant descriptor for duration is selected by the user (refer to Table).

Table 7. Description of duration and assigned numerical values

Numerical Rating	Duration	
	Category	Descriptors
1	Immediate	Impact will self-remedy immediately
2	Brief	Impact will not last longer than 1 year
3	Short term	Impact will last between 1 and 5 years
4	Medium term	Impact will last between 5 and 10 years
5	Long term	Impact will last between 10 and 15 years
6	On-going	Impact will last between 15 and 20 years
7	Permanent	Impact may be permanent, or in excess of 20 years

7.3 Extent

The extent refers to the geographical scale of impact on the environmental receptor. The relevant descriptor for extent is selected by the user (refer to Table).

Table 8. Description of extent and assigned numerical values

Numerical Rating	Extent	
	Category	Descriptors
1	Very limited	Impacts very limited / felt in isolated areas of the study area
2	Limited	Impacts limited to specific parts of the study area
3	Local	Impacts felt mostly throughout the study area
4	Municipal area	Impacts felt outside the study area, at a municipal level
5	Regional	Impacts felt outside the study area, at a regional / provincial level
6	National	Impacts felt outside the study area, at a national level
7	International	Impacts felt outside the study area, at an international level

7.4 Probability

To calculate the significance of an impact, the probability (or likelihood) of that impact occurring is also taken into account. (Refer to Table).

Table 9. Definition of probability ratings

Numerical Rating	Probability	
	Category	Descriptors
1	Highly unlikely / None	Expected never to happen
2	Rare / improbable	Conceivable, but only in extreme circumstances, and/or might occur for this project although this has rarely been known to result elsewhere
3	Unlikely	Has not happened yet but could happen once in the lifetime of the project, therefore there is a possibility that the impact will occur
4	Probable	Has occurred here or elsewhere and could therefore occur
5	Likely	The impact may occur
6	Almost certain / Highly probable	It is most likely that the impact will occur
7	Certain / Definite	There are sound scientific reasons to expect that the impact will definitely occur

7.5 Significance

These are auto-calculated in the spreadsheet as described above and includes the following categories in Table 11. This table is for illustration only.

Table 10. Application of significance ratings

Range		Significance rating
-147	-109	Major (-)
-108	-73	Moderate (-)
-72	-36	Minor (-)
-35	-1	Negligible (-)
0	0	Neutral
1	35	Negligible (+)
36	72	Minor (+)
73	108	Moderate (+)
109	147	Major (+)

The following, broader considerations will also be considered. These include the level of confidence in the assessment rating; the reversibility of the impact; and the irreplaceability of the resource as set out in Tables 12, 13 and 14 respectively.

Table 11. Definition of confidence ratings

Rating	Descriptor
Low	Judgement is based on intuition
Medium	Determination is based on common sense and general knowledge

High	Substantive supportive data exists to verify the assessment
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Table 12. Definition of reversibility ratings

Rating	Descriptor
Low	The affected environment will not be able to recover from the impact - permanently modified
Medium	The affected environment will only recover from the impact with significant intervention
High	The affected environmental will be able to recover from the impact

Table 13. Definition of irreplaceability ratings

Rating	Descriptor
Low	The resource is not damaged irreparably or is not scarce
Medium	The resource is damaged irreparably but is represented elsewhere
High	The resource is irreparably damaged and is not represented elsewhere

8. Description of Affected Environment

8.1 Map of Key Features

No sites were identified within the proposed study area no.'s 1 to 7. A site that resembles a possible Muslim cemetery was identified within the study area no. 8.

The key features observed outside of the study areas are noted on the map below.

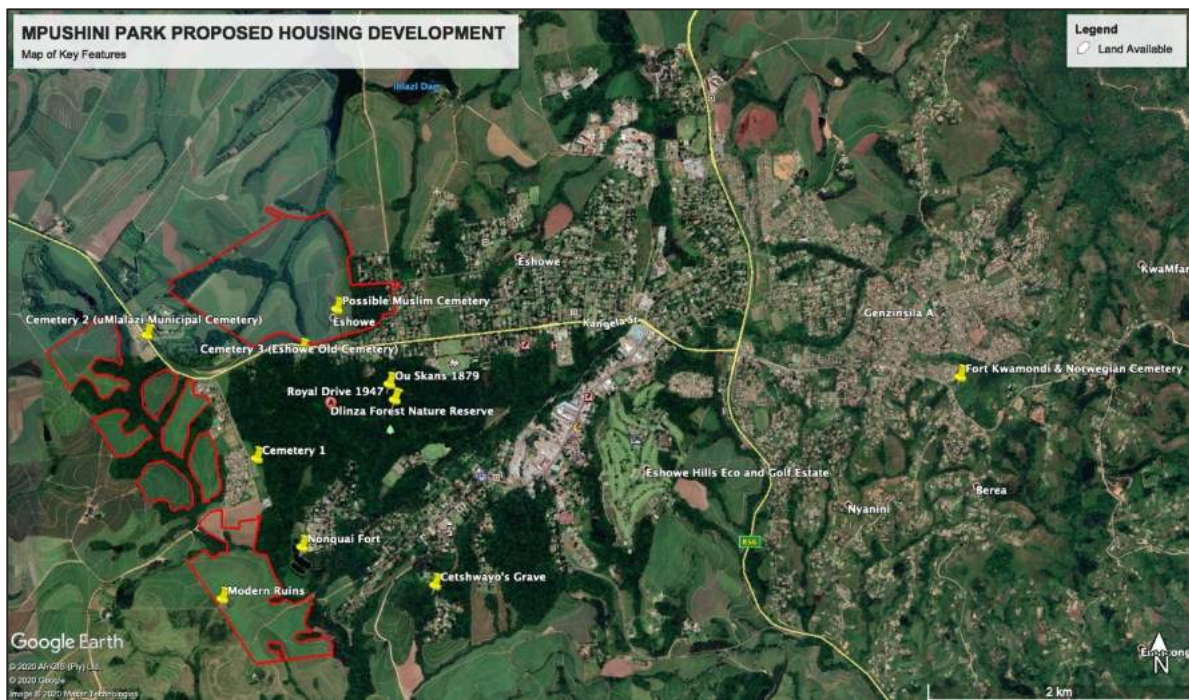


Figure 17. Places of Interest outside the study areas

8.1.1 Findings

The area was accessed by vehicle and investigated on foot. The areas have been mostly disturbed from green field condition and now contains organized sugar cane plantations.

Some illegal dumping takes place within the study areas.

A possible Muslim Cemetery was identified within study area no. 8. The area is fenced off and can only be accessed from one entry point. It is overgrown and surface observations were hampered by the dense vegetation. The remains of a building are in the centre of this area. The site measures approximately 5 400m² in size and the dilapidated building is painted in the same light blue and white scheme characterising other local Muslim religious structures. Since Muslim graves are usually not indicated on the surface by any structures this possibility could not be confirmed.

The possible cemetery is not marked on any of the topographical maps.



Figure 18. Dense vegetation within the fenced off section of study area no. 8



Figure 19. Dense vegetation within the fenced off section of study area no. 8



Figure 20. Concrete structure



Figure 21. Ruin within the fenced off section of study area no. 8



Figure 22. Location map of the site within study area no. 8

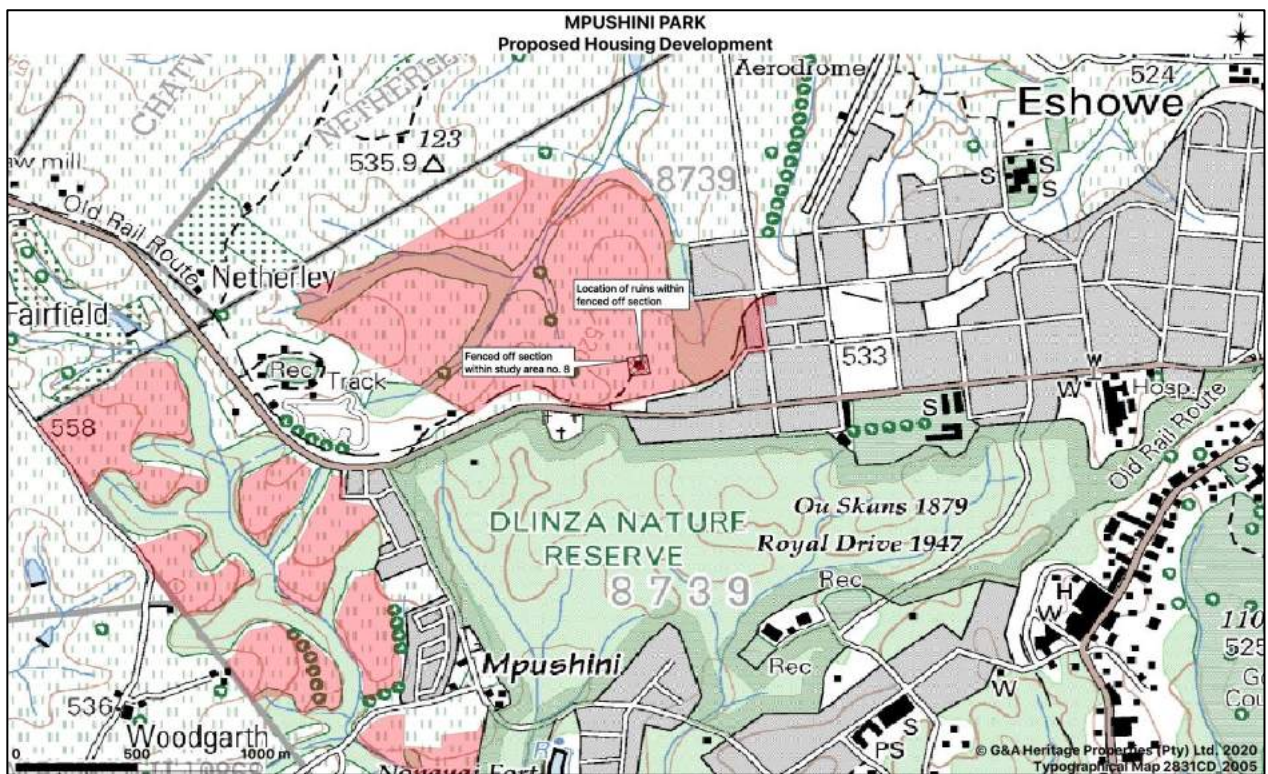


Figure 23. Location map of the site within study are no. 8



Figure 24. Sugar cane plantations with some green field forests intact



Figure 25. Intact green fields forest



Figure 26. Intact green fields forest along Sid Peters Street



Figure 27. Illegal dumping taking place within the study area

There were some ruins located on the western border of the study area no. 7 – none of these were found to be of historic significance or contained any unique architectural characteristics. These are discussed under section 4.4.3 Built Environment in this report.

During the field investigations, the following new key features were identified outside of the study areas.

- Cemetery 1 located on Windham Street
 - S28° 53' 55.07" E31° 26' 36.64"



Figure 28. Cemetery 1 located on Windham Street

- Cemetery 2 located on Route P50-1: Eshowe New Cemetery / Crematorium
 - S28° 53' 24.78" E31° 26' 00.81"



Figure 29. Cemetery 2 located on Route P50-01



Figure 30. Cemetery 2 located on Route P50-01

9. Baseline

Context Relevant to Project Location, Design, Operation, or Mitigation Decisions

9.1 Palaeontology

The study area is designated as “Blue” or “Low” in terms of its paleontological sensitivity. There is no need for a specialist study in such cases.

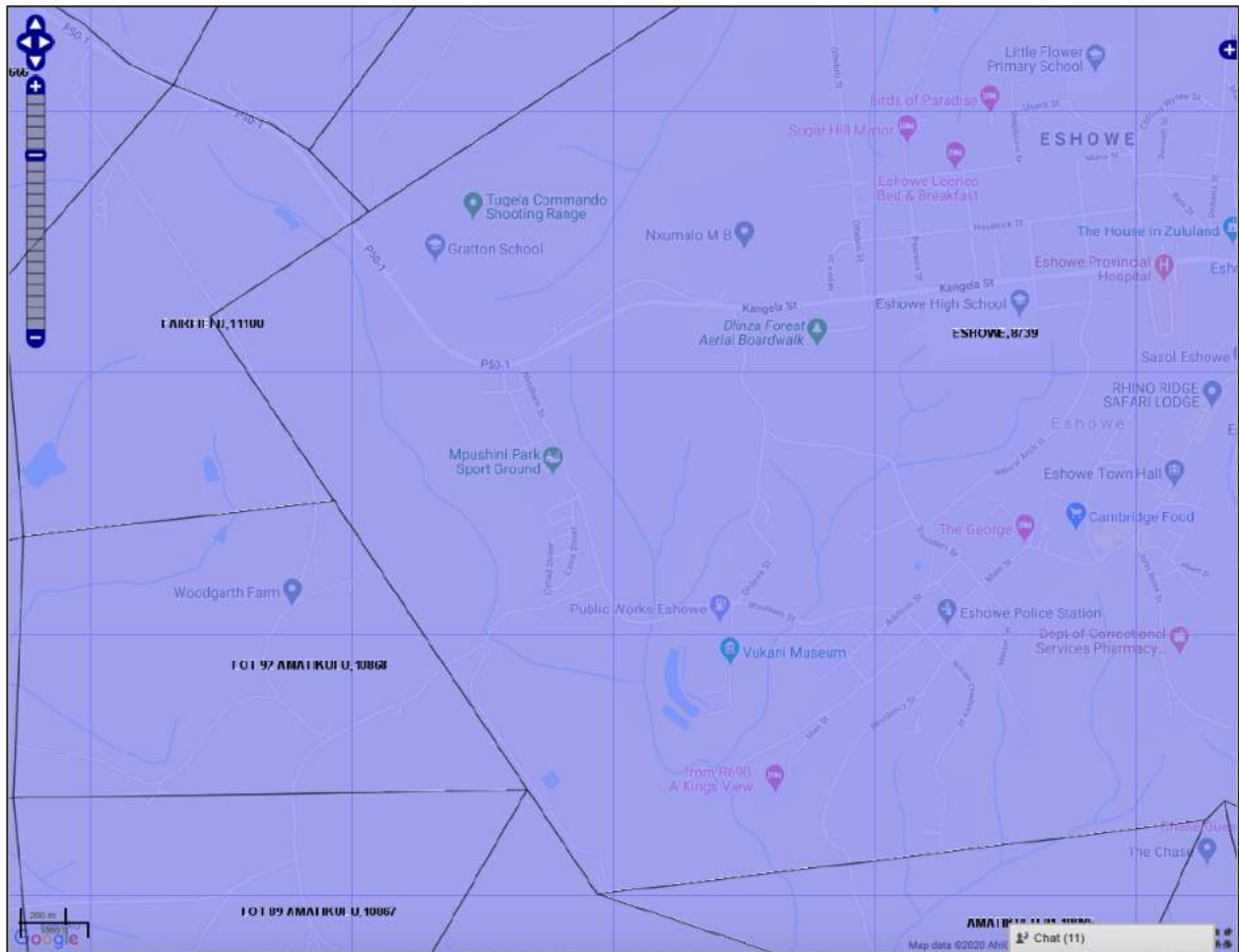


Figure 31. Paleo Sensitivity Map

Table 14. Palaeontological Sensitivity

Colour	Sensitivity	Action Required
RED	VERY HIGH	Field assessment and protocol for finds is required.
ORANGE / YELLOW	HIGH	Desktop study is required and based on the outcome of the desktop study, a field assessment is likely.
GREEN	MODERATE	Desktop study is required.
BLUE	LOW	No Palaeontological studies are required however, a protocol for finds is required.
GREY	INSIGNIFICANT / ZERO	No Palaeontological studies are required.
WHITE / CLEAR	UNKNOWN	These area will require a minimum of a desktop study. As more information comes to light, SAHRA will continue to populate the map.

9.2 Stone Age

This area is home to all three of the known phases of the Stone Age, namely: The Early- (2.5 million – 250 000 years ago), Middle- (250 000 – 20 000 years ago) and Late Stone Age (22 000 – 200 years ago). The Late Stone Age in this area also contains sites with rock art from the San and Khoekhoen cultural groups. Early to Middle Stone Age sites are uncommon in this area, however rock-art sites and Late Stone Age sites are much better known.

During the Middle Stone Age, 200 000 years ago, modern man or Homo sapiens emerged, manufacturing a wider range of tools, with technologies more advanced than those from earlier periods. This enabled skilled hunter-gatherer bands to adapt to different environments. From this time onwards, rock shelters and caves were used for occupation and reoccupation over very long periods of time.

The Middle Stone Age (MSA), as defined by Goodwin and Van Riet Lowe (1929), was viewed as a switch in technology from core tools to flake tools and was thought to represent an intermediate technology between the Earlier and Later Stone Age (LSA). Triangular flakes with convergent dorsal scars and faceted butts distinguished the MSA, and radial and discoidal types, along with single and double platform examples, dominated cores. The 'type fossil' was considered to be the worked flake point. Due to both the relatively long time span encompassed by the MSA (c. 250 000-20 000BP) and the high degree of regional variation, it has proved difficult to include all MSA assemblages within Goodwin and Van Riet Lowe's criteria. More recent attempts have been made to revise the definition of the MSA (Klein 1970; Beaumont & Vogel 1972; Volman 1984) and to establish a cultural sequence but with limited success. As a result, identifying and understanding the end of the MSA is still difficult. Disagreement concerning the MSA/LSA transition in southern Africa centres on four issues: 1) the definition of what constitutes final MSA technology; 2) the existence of a transitional MSA/LSA industry; 3) the dating of the MSA/LSA transition; and 4) the existence of an Early LSA (ELSA) which represents a distinct industry that is not part of the earliest recognized LSA, the Robberg (Clark, 1997).

1985 excavation at Umhlatuzana rock shelter in Natal by Kaplan yielded a long and detailed sequence of stone artefacts, which covered the time range from the Middle Stone Age (MSA) to the Later Stone Age (LSA), including the MSA/LSA transition, and early LSA microlithic bladelet assemblages. The change from the MSA to the beginning of the LSA took place between 35 000 and 25 000 BP. Robberg-like assemblages recovered from Umhlatuzana are the first to be positively identified in Natal. Pre-dating 18 000 BP and post-dating 12 000 BP, they show that assemblages of this nature were produced earlier and later in Natal than elsewhere in the country. Changes in the Umhlatuzana stone artefact assemblages were not the result of the introduction from elsewhere of new types of tools, but took place locally, as the result of a single evolving cultural tradition in a trajectory of cultural and social change (Kaplan, 1986).

Recent research by Wadley on the Middle Stone Age of Sibudu Cave north of Durban indicated that distinctions between the Middle Stone Age and the Late Stone Age based on backed blades could be misleading (Wadley, 2005). Although research on MSA sites is limited, this research illustrates the potential value of investigating Stone Age sites in KZN closer.

The Late Stone Age, considered to have started some 20 000 years ago, is associated with the predecessors of the San and Khoi Khoi. Stone Age hunter-gatherers lived well into the 19th century in some places in SA. Stone Age sites may occur all over the area where an unknown number may have been obliterated by mining activities, urbanisation, industrialisation, agriculture and other development activities during the past decades.

A large representation of Rock-Art sites is located in this area. During 1981 Mazel completed a survey of the Drakensberg and Southern Natal and documented over 400 rock art sites with more than 20 000 paintings (Mazel, 1981). The occurrence of these sites is however subject to very specific environmental parameters, none of which are present in the study area.

9.3 Iron Age

During the third century AD, several groups of farming peoples from eastern and south central Africa began to settle along the east coast and river valleys that drain into the Indian Ocean (Maggs 1984a, 1989; Mitchell 2002). In eastern South Africa, these early farmers display a strong preference for settling a savannah environment along major water bodies where annual precipitation from 400 to over 1000mm provided adequate moisture for grain production. Over thirty EIA identified settlements in the HIA: Mpushini Park Housing Development

Thukela Basin are clustered on discontinuous patches of rich colluvial soils within a short distance of the edge of the Thukela River or its tributaries. EIA settlements were initially established in the coastal forest in the fifth century AD and later in the savannah woodland belt alongside rivers in the (seventh century AD). The opening of riverine forest and woodlands by EIA farmers is apparent from the palaeobotanical record, current vegetation distribution (Hall 1981) and settlement distribution in the Thukela Basin. All documented sites are found within 100m of the relic canopy fringe (van Schalkwyk 1992).

EIA sites averaging 7 hectares in size are consistently located on the most productive nodes of soils confined to confluences and colluvial slip-off slopes along the major drainage courses, which comprise only about 9 per cent of the landscape (Maggs 1980: 7).

“Interpretations of the internal spatial organization of EIA sites in southern Africa are complicated by the relatively long use and frequent reoccupation of sites, often over several hundred years (Maggs 1984b, 1989). These reoccupations of the same places have created a palimpsest of flat, expansive settlements, with both superimposed and laterally displaced stratigraphy (Greenfield et al. 2000). Despite this situation, several large-scale horizontal excavations of settlements in the region have demonstrated a spatial layout of features that are similar to homestead spatial organization derived from nineteenth- and twentieth-century Nguni and Sotho-Tswana ethnography (Kuper 1982), called the Central Cattle Pattern (CCP). This pattern is characterized by domestic residences of the senior man's wives placed in ranked order in an arc or circle around a central area containing livestock pens, the burials of high-status individuals and a court or assembly area where men gather to discuss political matters (Huffman 2001). Archaeologically, a similar pattern is represented by a series of domestic complexes (hut floors, grain bins or pits, ash and other refuse middens) surrounding a series of non-domestic activity areas, including livestock enclosures and specialist activity areas separated by an open space devoid of cultural materials. There is some variation in the size of the open space. At Broederstroom in north-eastern South Africa, the distance between hut floors and a livestock enclosure was as little as 10m (Huffman 1993). At KwaGandaganda in the Mngeni valley in KwaZulu-Natal, the open space was 90m across (Whitelaw 1994), and at Ndondondwane this open space was 60-100m” (Greenfield and van Schalkwyk 2003) (Huskel J, Greenfield, Kent, D, Fowler, & Leonard O, van Schalkwyk, 2005).

As well, faunal evidence suggests that certain species, such as nyala antelope, were forced to shift the range of their habitat after the woodland was opened (Maggs 1995:175). A considerable number of Late Iron Age, stone walled sites, dating from the 18th and the 19th centuries (some of which may have been occupied as early as the 16th century), occur along and on top of the rocky ridges here. These settlements and features in these sites, such as huts, were built with dry stone, reed and clay.

Stone walled settlements are concentrated in clusters of sites and sometimes are dispersed over large areas making them vulnerable to developments of various kinds. A site consists of a circular or elliptical outer wall that is composed of a number of scalloped walls facing inwards towards one or more enclosures. Whilst the outer scalloped walls served as dwelling quarters for various family groups, cattle, sheep and goat were stock in the centrally located enclosures. Huts with clay walls and floors were built inside the dwelling units. Pottery and metal items are common on the sites. However, iron and copper were not produced locally on these sites.

Many of the Iron Age sites are also associated with Zulu encampments. Due to the often semi-nomadic nature of these and the use of removable huts, these sites are often difficult to identify and short term occupational sites might only manifest in some stone circles, use to anchor these structures to the ground.

9.4 Historic Era

KwaZulu-Natal is an amalgamation of the ‘homeland’ territory of KwaZulu (literally ‘home of the Zulus’) and the province of Natal. The latter was named after the Christmas Day 1497 sighting of the coast by the great Portuguese explorer and navigator, Vasco da Gama. At that time the territory was occupied by clans of the Nguni tribe who had migrated south from central Africa over the previous few centuries.

British settlers first arrived at Port Natal (Durban) in 1824 when Shaka, King of the Zulu was firmly in charge of the hinterland. Later, the Zulu King, Dingane, at first offered the Boers land but went back on his word killing their leader, Piet Retief. Revenge came on 16th December 1838, when a vastly outnumbered contingent of Boers defeated the Zulus at the Battle of Blood River. A Republic of Natalia was declared the following year but was annexed by Britain in 1843.

Eshowe was the colonial capital of Zululand and it is steeped in Zulu and Colonial history. With a rich cultural and royal history, Eshowe has been home to Zulu Kings Shaka, Mpande, Cetshwayo and Dinuzulu, as well as being British military headquarters.

Eshowe was the first British Capital of Zululand during its time as a separate colony (1887 – 1897). The town was proclaimed in 1887.

In 1860 Cetshwayo, then only a Zulu Prince, built a kraal here and named the place Eziqwaqweni (*the abode of robbers*). A mission station was established in 1861 by the Rev. Ommun Oftebro from Norway.

During the Anglo-Zulu War (11 January 1879 – 4 July 1879), Colonel Charles Pearson led the coastal column to Eshowe. They encountered part of the Zulu army at the Nyezane River and after a short battle pushed on to the KwaMondi Mission which was fortified by Fort Ekowe. The forces under Colonel Pearson were besieged for 10 weeks until relief came on the 3rd of April 1879 by Lord Chelmsford after the Battle of Gingindlovu.

The Nonquai Fort was built in the middle of the Dlinza Forest in Eshowe in 1883, which today functions as Zululand's biggest Museum Village. Within the village of Fort Nonquai are a number of museums. For instance, the Zululand Historical Museum, which not only journeys from the Iron Age to the present day to trace the history of the area, but also focuses on the cross-cultural influences the past 200 years have brought to bear on Zululand. Another of the museums in the village, the Vukani Museum, houses the well-known Vukani Collection - formerly owned by the Reverend Kjell Löfroth, a Swedish missionary who worked with the Zulus. One of the best basket collections in the country lines the walls. What is wonderful about this museum in particular is that it has helped revive what was a dying art form of basketry. Several of the artists whose work is exhibited here have gone on to receive international recognition. Another two buildings in the complex are the Mission Museum Chapel and Adams' Outpost. The chapel serves as a haven for meditation and lies in a particularly peaceful part of the village, used for special events like weddings and christenings. Adams' Outpost, set in the oldest Victorian residence in Zululand.

Eshowe is home to Martyr's Cross, which stands proudly on Mpodweni Hill. Martyr's Cross is a monument that was erected in memory of the first Christian martyr in Zululand, Maqhamusela Khanyile. In the latter half of the 1800's, soldiers were not permitted to become baptised Christians, as they were then presumed to pay loyalties to their beliefs, and not to the Zulu king. However, Maqhamusela Khanyile was prepared to die for his determination to dedicate his life to Christianity and to refuse to serve in the army of King Cetshwayo. And die he did. After one misfire, the weapon let off a single shot, and the countryside fell silent. He was put to death near the Norwegian Mission Station on top of Mpodweni Hill in 1877.

The story of the faith and courage of Maqhamusela Khanyile was carried down through the generations, inspiring young and old alike to pursue their commitment to what really matters to them. In 1937, a concrete cross was erected on the hill to honour Khanyile. Some 14 years later, it was replaced by a cross of steel. Then, in 2007, the granite monument that still stands today was unveiled in a ceremony to honour, not only Maqhamusela Khanyile, but all of those men and women who died martyrs' deaths.

In 1947 the British Royal family (King George VI, Queen Elizabeth, Princess Elizabeth and Princess Margaret) visited and were welcomed in Eshowe by King Cyprian.

Eshowe served as the seat of the first Black Diocesan in South Africa of the Anglican and Roman Catholic Church. Eshowe is still the seat of the Bishop of the Anglican Diocese of Zululand.

When the homeland of KwaZulu was re-incorporated into the Natal province after the end of apartheid in 1994, the Province of Natal was renamed KwaZulu-Natal.

Sources:

Ashe, Major & Wyatt-Edgell, Capt E V. *The Zulu Campaign*, (1880).
Barthorp, Michael. *The Zulu War: A pictorial history*, (Poole 1980).
Clammer, David. *The Zulu War* (St Martin's Press, 1973).
Clarke, Sonia. *Zululand at War: 1879: The conduct of the Anglo-Zulu War*.
<http://www.heritagekzn.co.za/sites/visit/eshowe>
<http://www.sahistory.org.za/people/chief-cetshwayo>
<http://eshowemuseums.org.za>

<https://eshowe.com/about-eshowe/>
<http://www.sahistory.org.za/place/eshowe>

9.5 Archival Research

Three main sources of information regarding the heritage sensitivity of this area could be identified. These were;

- Scientific publications on heritage related research in the area
- Previous heritage studies in the area as per the SAHRIS database
- Historic maps and figures as available in the National Archive

Scientific publications

Several publications on heritage related work in this area could be sourced. These include, but are not limited to;

- *Natal Volunteer Record. Annals and Rolls of Service in the Anglo-Boer War, 1899-1900.* Robinson & Co., Durban, 1900
- Amery, L.S. (ed.): *The Times History of the War in South Africa, 1899-1900*, Sampson Low, Marston and Company, Ltd., London, 1902
- H.P. Holt: *The Mounted Police of Natal*, John Murray, London, 1913
- Chief Authority, Leapfrogging Headmen and the Political Economy of Zululand, South Africa, ca. 1930-1950. Aran S. Mackinnon. *Journal of Southern African Studies*, Vol. 27, No. 3, Special Issue for Shula Marks (Sep. 2001), pp. 567-590
- Bulwer, Chelmsford and the Border Levies. J.P.C. LABAND. *Theoria: A Journal of Social and Political Theory*, No. 57 (October 1981), pp. 1-15
- The Forests of Zululand. *Science*, Vol. 18, No. 443 (Jul. 31, 1891) pp.66-67
- Dinuzulu and the Quest for Zulu Paramountcy, 1898-1906. Paul Thompson. *The International Journal of African Historical Studies*, Vol. 49, No. 3 (2016), pp. 305-328.
- A Critical Analysis of James Stuart's *A History of the Zulu Rebellion 1906*. Paul S. Thompson. *History in Africa*, Vol. 41 (2014), pp. 195-220.

9.6 SAHRIS Database Studies

An extensive research into the SAHRIS database resulted in the identification of the following heritage related studies that have been performed over the last decade in the study area. Only studies within a radius of 50km from the study area were considered.

- Anderson, G. 2008. Archaeological Survey of the Proposed Routeledge Park Housing Development, Eshowe.
- Prins, F. 2017. First Phase Cultural Heritage Impact Assessment of the Proposed P 50-1 Road Upgrade near Eshowe, KwaZulu-Natal.
- Prins, F. 2017. A First Phase Cultural Heritage Impact Assessment of the Proposed Rehabilitation of the P393 (R34) Road and Upgrade of the Dango Bridge (B1372) and Bedlane Bridge (B1330) near Eshowe, KwaZulu-Natal.
- Prins, F. 2013. A First Phase Cultural Heritage Impact Assessment of the Proposed Mpaphala Clinic, Umlalazi Local Municipality.
- Wahl, E., van Schalkwyk, L. 2011. Phase 1 Heritage Impact Assessment Report: Gingingdlovu to Mandini 132kV Power Line, uThungulu District Municipality, KwaZulu-Natal.
- Van Schalkwyk, L. 2012. Phase 1 Heritage Impact Assessment Report: Upgrade of Port Durnford Substation and Establishment 88kV Turn In Lines, uMhlatuze Local Municipality, uThungulu District, KwaZulu-Natal.
- Pelser, A. 2013. A Report on the Archaeological Test Excavations at Chief Dingiswayo's Homestead Site (Oyengweni), Mtethwa Tribal Area, near Kwambonambi, uThungulu District Municipality, KZN.
- Wahl, E. 2012. Phase 1 Heritage Impact Assessment Report: Nkandla Smart Growth Development, Nkandla Local Municipality, uThungulu District, KwaZulu-Natal.
- Anderson, G. 2014. Heritage Survey of the Proposed Ngwegweni Access Road, Nkandla Ward 4, uThungulu District Municipality, KwaZulu-Natal.
- Gaigher, G. 2018. Proposed Expansion of the Eshowe Cemetery in the uMlalazi Local and uThungulu District Municipalities, KwaZulu Natal.

Relevance of Listed Heritage Studies for the Study Area

Of specific value for this project is the 2018 report by S. Gaigher. Proposed Expansion of the Eshowe Cemetery in the uMlalazi Local and uThungulu District Municipalities, KwaZulu Natal.

This study identified the following sites of heritage significance in the general vicinity of the current study area:

- The Old Eshowe Cemetery
 - S28° 53' 27.99" E31° 26' 44.43"



Figure 32. Eshowe Old Cemetery



Figure 33. Eshowe Old Cemetery

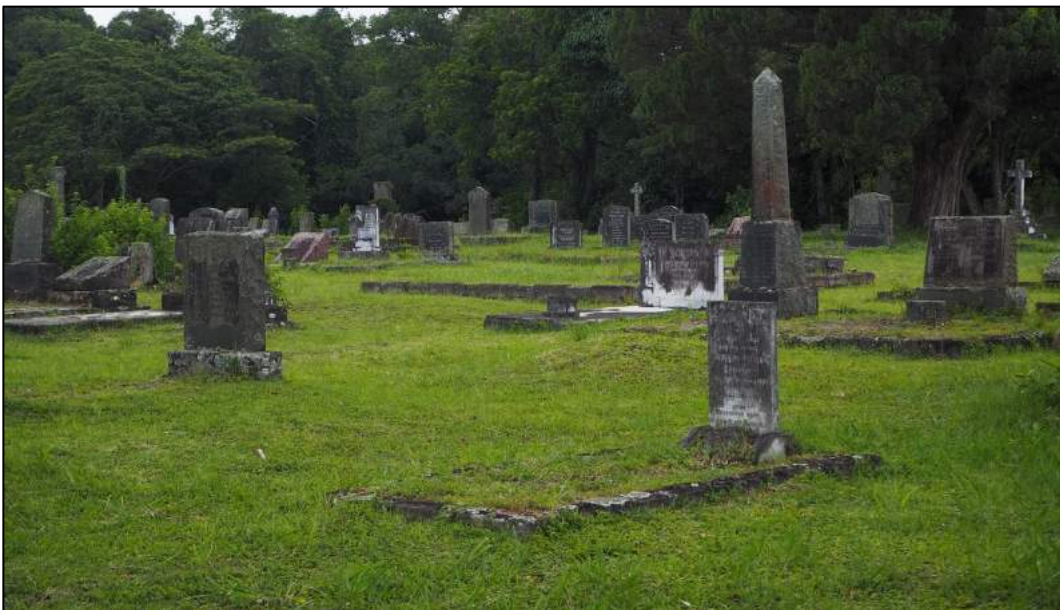


Figure 34. Old Eshowe Cemetery

- The Nonquai Fort
 - S28° 54' 16.78" E31° 26' 44.38"
 Declaration Typer: Provincial Heritage Site by the National Monuments Council.
 Site Reference No.: 9/2/408/0001.
 Gazette No.: 2637
 Gazette Date: Friday, 12 May 1939.



Figure 35. Nonquai Fort

SCHEDULE.		BYLAE.	
<i>Object.</i>	<i>Situation.</i>	<i>Voorwerp.</i>	<i>Ligging.</i>
IN THE CAPE PROVINCE.			
Cross erected by Bartholomew Dias	The remains of the Cross originally erected by Bartholomew Dias in 1488 at "False Island," Kwaaihoek, in the Alexandria Coast Reserve in the District of Alexandria, Province of the Cape of Good Hope, and presently housed at the University of the Witwatersrand.	Kruis opgerig deur Bartholomeus Dias	Die oorblyfsels van die kruis oorspronklik opgerig deur Bartholomeus Dias in 1488 te „False Island”, Kwaaihoek, in die Alexandria-kusreserwe, distrik Alexandria, provinsie van die Kaap die Goeie Hoop, en op die oomblik gehuisves by die Universiteit van die Witwatersrand.
IN THE PROVINCE OF THE TRANSVAAL.			
Blockhouse, Hekpoort....	Hekpoort Blockhouse, being portion (called "Blockhouse") of Portion 95 of Portion 1 of the farm Hekpoort No. 122, situate in the district of Krugersdorp in the Province of the Transvaal.	Blokhuis, Hekpoort.....	„Hekpoort Blockhouse," gedeelte (genoem „Blockhouse") van gedeelte 95 van gedeelte 1 van die plaas Hekpoort No. 122 geleë in die distrik Krugersdorp, provinsie Transvaal.
IN THE PROVINCE OF NATAL.		IN NATAL.	
Nonquai Fort, Eshowe...	Situate on Lot No. 415, Eshowe Township, situate in the County of Zululand, Province of Natal.	Nonquai-fort, Eshowe....	Geleë op perseel No. 415 in die dorpsgebied Eshowe, geleë in die distrik Soeloeland, provinsie Natal.

- Ou Skans 1879
 - S28° 53' 36.78" E31° 27' 08.85"
- Royal Drive 1947
 - S28° 53' 40.63" E31° 27' 10.35"
- Cetshwayo's Grave
 - S28° 54' 26.12" E31° 27' 21.66"



Figure 36. Cetshwayo's Grave

Cetshwayo, a son of King Mpande and was born in or about 1826. In 1856 he fought a bloody succession battle with his brother Mbuyazi. In 1873, following the death of Mpande, he became king. In 1879 the British Government in South Africa orchestrated a war to remove the threat of the independent Zulu Kingdom. The British won the war and the King was interned in Cape Town and whilst there met Prince Albert and Prince George (later King George V). He requested and was granted an audience with Queen Victoria.

He sailed to England in September 1882 and on his return was reinstated as King but on terms set by the British Government. As a result of the poorly considered reallocation of land by the British authorities, civil war broke out in Zululand between supporters of the king's Usuthu faction and the Mandlakazi faction under Inkosi Zibhebhu.

King Cetshwayo again settled at Ondini, but his homestead was attacked by Zibhebhu. He was injured and took refuge at Eshowe where he died on 8 February 1884.

His grave is in a clearing in the Nkandla Forest, and is tended by the Shezi clan. The area is considered to be sacred by the Zulu people. Remains of a wagon that was placed on top of his grave can be seen at the Cultural Museum at Ondini.

- Fort Kwamondi & Norwegian Cemetery
 - S28° 53' 34.96" E31° 29' 49.02"

Today, all that remains of the Fort are the deep trenches that surrounded it.

It was originally a station established by Bishop Schreuder of the Norwegian Mission Society in 1860 and was named after the first Pastor, Ommund Oftebro who was known to the Zulus as Mondli.

At the start of the Zulu War in 1879 the station was occupied by troops under the command of Colonel Pearson. The buildings were used as a hospital and supply depot and it was at this time that the trenches were dug to create a fort.

When the British evacuated the fort, the original buildings were burnt and were later built on an adjoining ridge.

The original mission cemetery can still be seen at the fort as well as the graves of some British soldiers.



Figure 37. Norwegian Mission Chapel

9.7 Historical Typographical Maps

Especially during the evaluation of historic structures, the use of archived historic maps is very handy. They give a direct chronological reference for such sites and also lead the investigation on the ground.

The following historic map sets are relevant for this study (in chronological order);

- 2831CD_1964
- 2831CD_1992
- 2831CD_2005

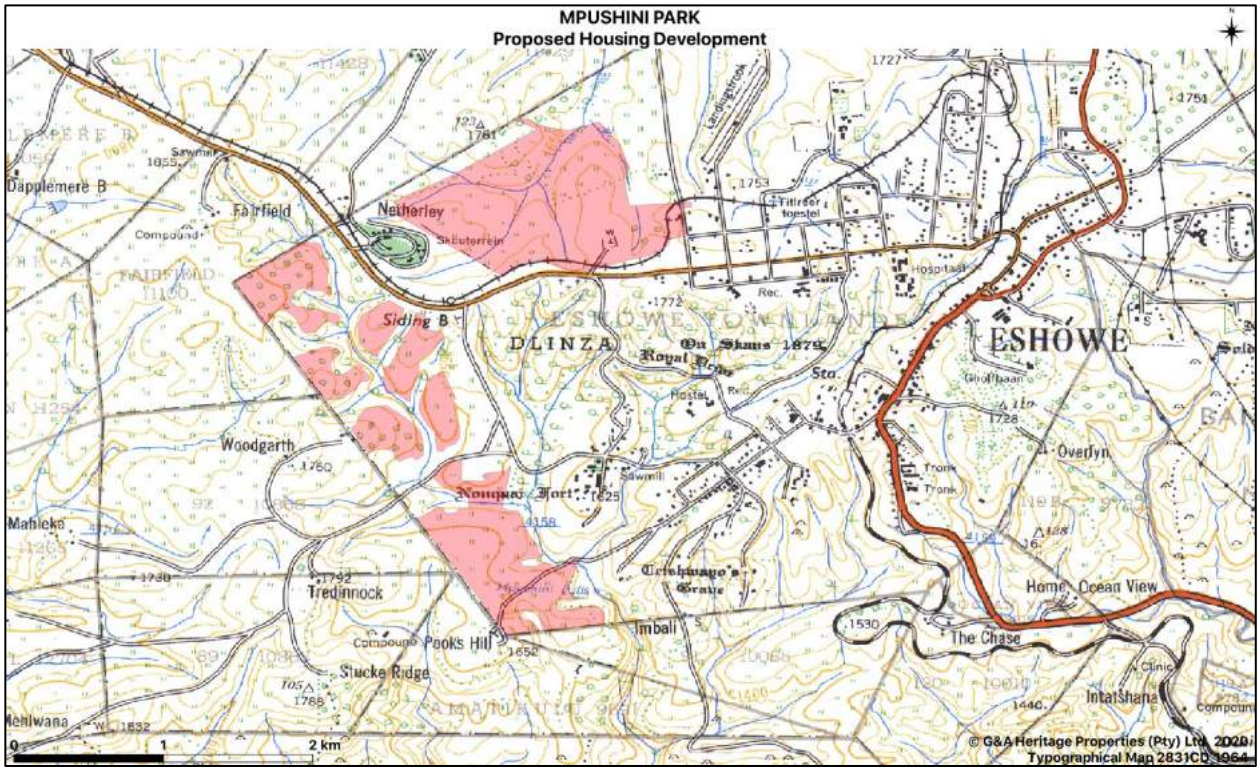


Figure 38. 1964 Topographic Map

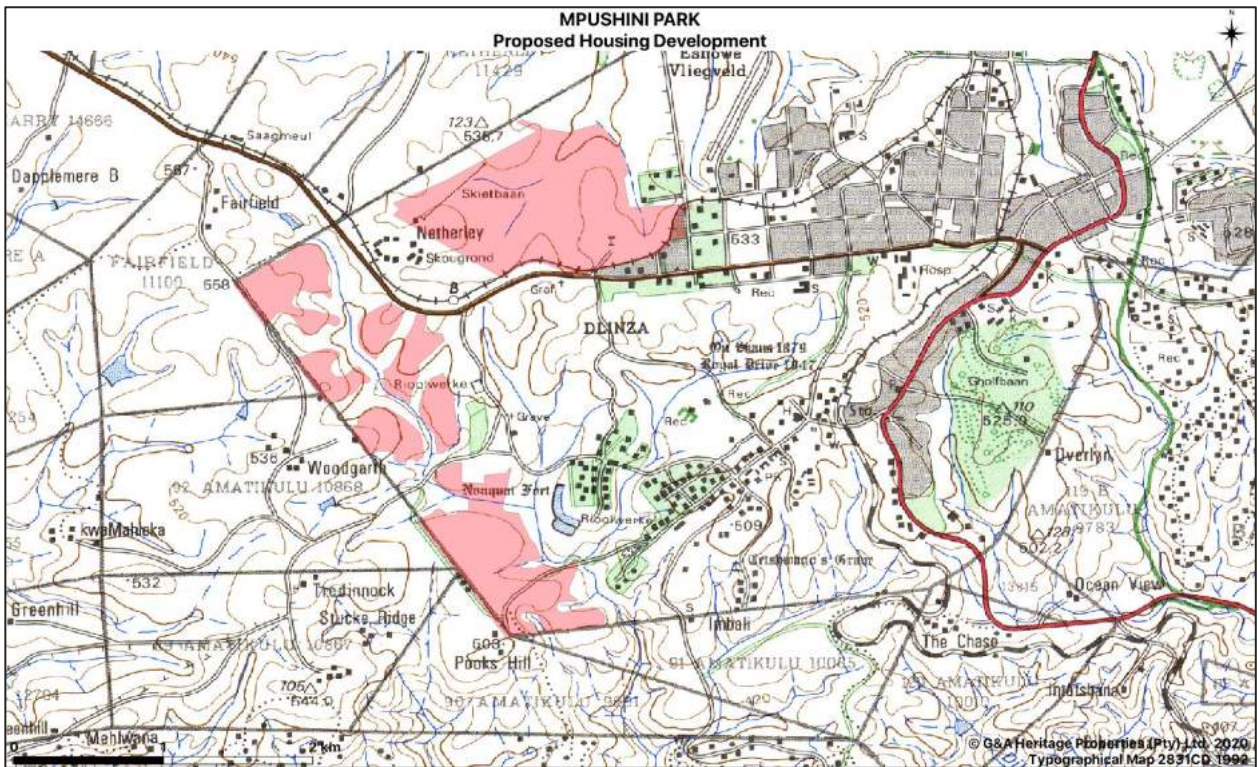


Figure 39. 1992 Topographical Map

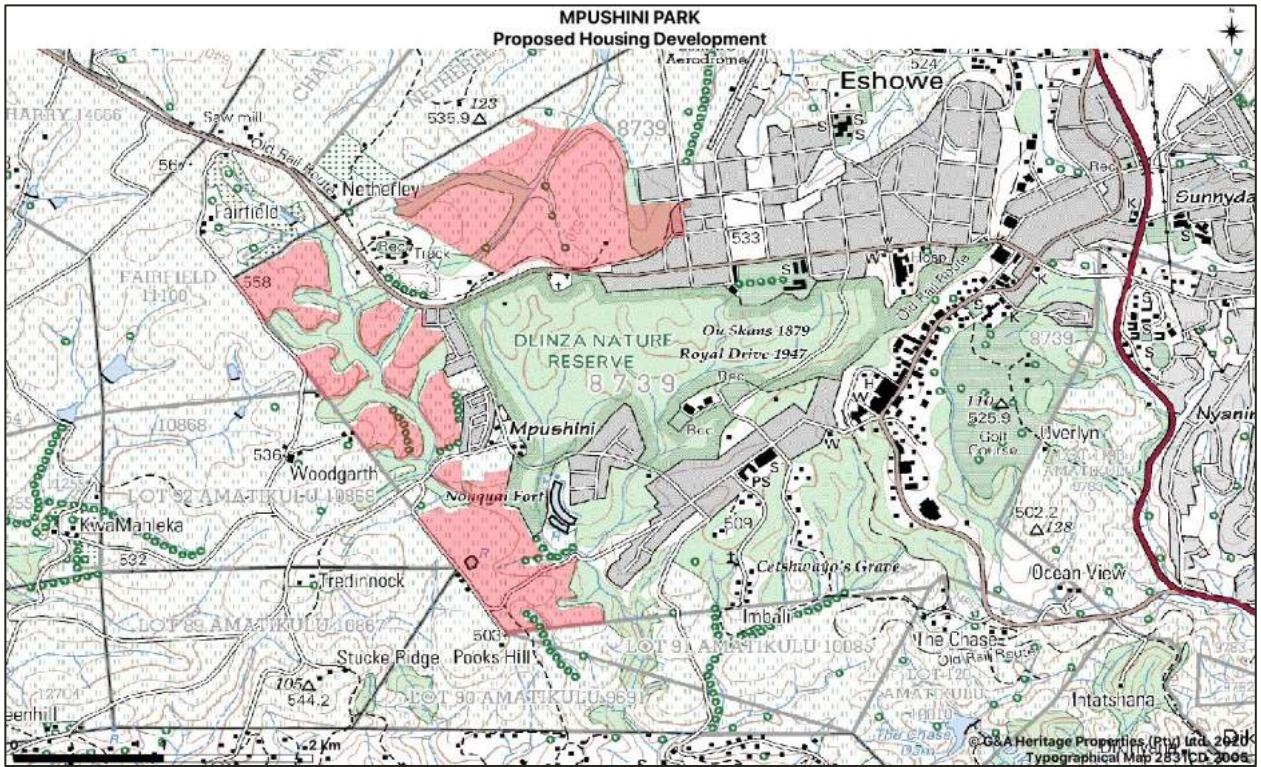


Figure 40. 2005 Topographical Map

10. Potential Heritage Impacts and Proposed Mitigation

Heritage Impact Assessment

10.1 Introduction and scope

This component will evaluate the potential impact that the proposed development could have on heritage sites and objects of community, cultural or scientific value. This includes archaeological, cultural heritage, built heritage and basic paleontological assessments to determine the impacts on heritage resources within the study area.

The scope of work includes:

- Identification and assessment of archaeological, cultural, historic, built and paleontological sites within the study area
- Interrogation of project specific Drone data and aerial imagery
- Archival study of existing data and information for the study area
- Site inspection and fieldwork: 29 July 2020 and 24 November 2020. This site work includes communicating with local inhabitants to confirm possible locations of heritage and cultural sites.
- Compilation of a Heritage Impact Assessment (HIA) Report.

10.2 Impact Assessment and Proposed Mitigation

The site was readily accessible, and the confidence level of the provided impact evaluation is as a result high.

Damage to Graves and Burial Sites

None

Damage to Ceremonial Sites and Places-of-Power

None

Excavation of Palaeontological Materials

None

Damage to Unidentified or Buried Archaeological Sites

Unlikely

10.3 No-Go Alternative

Not considered.

10.4 Conclusions and Recommendations

The sites for the proposed proposed Mpushini Park Housing Development near Eshowe in the uMlalazi Local Municipality, King Cetshwayo District of the Kwa-Zulu Natal Province were investigated during a field visit and through archival studies. Study area no.'s 1 to 7 were found to be devoid of any heritage sites with significance.

Study area 8 contained one area with obvious demarcation with hedges and one line of fencing. It is a small square area of around 5400m² and it contains a dilapidated building in the centre. The site strongly resembles a Muslim cemetery, and the remains of the building is painted in the light blue and white characteristic of other Muslim structures in the area. The site has also been specifically avoided during the sugarcane farming. Although this could not be confirmed through the archival study it is still recommended that the site undergoes a second phase of investigation before any development here takes place.

Some key features were located outside the boundaries of the study areas (3 respective cemeteries, Cetshwayo's Grave, forts and ruins). These will not be affected by the proposed development.

It is recommended that obscured, subterranean sites be managed as per the attached chance finds protocol if they are encountered.

Provided the recommendations in this report is followed there is no reason, from a heritage point of view, why this development cannot continue.

10.5 Chance Finds Protocol

It is important to note that, although unlikely, sub-surface remains of heritage sites could still be encountered during construction of the project. Such sites would offer no surface indication of their presence due to the high state of alterations in some areas as well as heavy vegetation cover in other areas. The following indicators of unmarked sub-surface sites could be encountered:

- Ash deposits (unnaturally grey appearance of soil compared to the surrounding substrate);
- Bone concentrations, either animal or human;
- Ceramic fragments such as pottery shards either historic or pre-contact;
- Stone concentrations of any formal nature.

The following recommendations are given should any sub-surface remains of heritage sites be identified as indicated above:

- 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.
- All construction in the immediate vicinity (50m radius of the site) should cease.
- The heritage practitioner should be informed as soon as possible.
- Mitigation measures (such as refilling etc.) should not be attempted.
- The area in a 50m radius of the find should be cordoned off with hazard tape.
- Public access should be limited.
- The area should be placed under guard.
- No media statements should be released until such time as the heritage practitioner has had enough time to analyze the finds.

Should any archaeological, palaeontological or cultural heritage resources, including graves or human remains (as defined and protected by the NRA 1999) be identified during the vegetation cleaning, surface scraping, trenching, excavation or construction phases of the development, it is recommended that the process as described below is followed.

On-site Reporting Process:

- The identifier should immediately notify his / her supervisor of the find(s).
- The identifier's supervisor should report the incident to the on-site SHE / SHEQ officer within 24hours of the find(s).
- Should the find(s) relate to human remains, the on-site SHE / SHEQ officer should immediately notify the nearest SAPS station of the find(s).
- The on-site SHE / SHEQ officer should report the find(s) to the appointed ECO / ELO officer within 24 hours after the find(s) was / were reported by the relevant supervisor.
- Within 72 hours of the find(s) being reported to the SHE / SHEQ officer, the ECO / ELO officer should ensure that the find(s) is reported on the SAHRIS Database and the relevant heritage specialist is contacted to make arrangements for a heritage inspection.
- Should the find(s) relate to human remains, the ECO/ ELO officer should ensure that the heritage inspection coincides with the SAPS inspection, to verify if the find(s) is / are of forensic, authentic (informal / older than 60 years) or archaeological (older than 100 years) origin.
- The heritage specialist should compile a heritage site inspection report based on the site-specific findings. The report should make recommendations for the destruction, conservation or mitigation of the find(s) and prescribe a recommended way forward for the development. The report should be submitted to the ECO / ELO officer, who should ensure submission thereof on the SAHRIS database.

- SAHRA / the relevant PHRA will state legal requirements for the development to proceed in the SAHRA / PHRA comments on the heritage inspection report.
- The developer should proceed with implementation of the SAHRA / PHRA comment requirements, which may well stipulate permit specifications to proceed.
 - Should the permit specifications stipulate further Phase 2 archaeological investigations (including grave mitigation), a suitable accredited heritage specialist should be appointed to conduct the work according to the applicable SAHRA / PHRA process.
 - The heritage specialist should apply for the permit.
 - Upon issue of the SAHRA / PHRA permit, the Phase 2 heritage mitigation program may commence.
 - Should the permit specifications stipulate destruction of the find(s) under a SAHRA / PHRA permit, the developer should immediately proceed with the permit application.
 - Upon the issue of the SAHRA / PHRA permit, the developer may legally proceed with the destruction of the archaeological, palaeontological or cultural heritage resource(s).
 - Upon completion of the Phase 2 heritage mitigation program, the heritage specialist will submit a Phase 2 report to the ECO / ELO officer, who should in turn ensure the submission thereof on the SAHRIS database.
 - Report recommendations may include that the remainder of a heritage site be destroyed under a SAHRA / PHRA permit.
 - Should the find(s) relate to human remains of forensic origin, the matter will be directly addressed by SAPS. A SAHRA / PHRA permit will not be applicable.

NOTE: the SAHRA / PHRA permit and process requirements relating to the mitigation of human remains requires suitable advertising of the find(s), consultation, mitigation and re-interment / deposition process.

Duties of the Supervisor:

1. The supervisor should ensure that all activities in the vicinity of the find(s) are ceased immediately upon the reporting thereof by the identifier.
2. The supervisor should ensure that the location of the find(s) is secured within 24 hours of the reporting thereof by means of a temporary fence allowing for a 5 – 10m heritage conservation buffer zone around the find(s). The temporary conserved area should be sign-posted as a “No Entry – Heritage Site” zone.
3. Where development was impacted on the resource, no attempt should be made to remove artefacts / objects / remains further from their context and should any artefacts / objects / remains that has / have been removed should be collected and placed within the conservation area or kept for safekeeping with the SHE / SHEQ officer.
4. It is imperative that where development has impacted on any archaeological, palaeontological or cultural heritage resources, the context of the find(s) be preserved as much as possible for interpretive and sample testing purposes.
5. The supervisor should record the name, company and capacity of the identifier and compile a brief report describing the events surrounding the find(s).
6. The report should be submitted to the SHE / SHEQ officer at the time of the incident report.

Duties of the SHE / SHEQ officer:

1. The SHE / SHEQ officer should ensure that the location of the find(s) is recorded with a GPS. A photographic record of the find(s), including implementation of temporary conservation measures, should be compiled. Where relevant a scale bar, or object that can indicate the scale, should be inserted in the photographs for interpretive purposes.
2. The SHE / SHEQ officer should ensure that the supervisor’s report, GPS co-ordinate and photographic record of the find(s) are submitted to the ECO / ELO officer.
3. Should the find(s) relate to human remains, the SHE / SHEQ officer should ensure that the mentioned reporting be made available to the SAPS at the time of the incident report.
4. Any retrieved artefacts / objects / remains should, in consultation with the ECO / ELO officer, be kept in a safe place (preferable on site).

Duties of the ECO / ELO officer:

1. The ECO / ELO officer should ensure that the incident is reported on the SAHRIS Database. (The ECO / ELO officer should ensure that he / she is registered on the relevant SAHRIS case with SAHRIS authorship to the case at the time of appointment to enable heritage reporting.)

2. The ECO / ELO officer should ensure that the incident report is forwarded to the heritage specialist for interpretive purposes at his / her soonest opportunity and prior to the heritage site inspection.
3. The ECO / ELO officer should facilitate appointment of the heritage specialist by the developer / construction consultant for the heritage inspection.
4. The ECO / ELO officer should facilitate access by the heritage specialist to any retrieved artefacts / objects / remains that have been kept in safekeeping.
5. Should the find(s) relate to human remains, the SHE / SHEQ officer should facilitate coordination of the heritage site inspection and the SAPS site inspection.
6. The ECO / ELO officer should facilitate heritage reporting and heritage compliance requirements by SAHRA / the relevant PHRA, between the developer / construction consultant, the heritage specialist, the SHE / SHEQ officer (where relevant) and the SAPS (where relevant).

Duties of the Developer / Construction Consultant:

1. The developer / construction consultant should ensure that an adequate heritage contingency budget is accommodated within the project budget to facilitate and streamline the heritage compliance process in the event of identification of incidental archaeological, palaeontological and / or cultural heritage resources during the course of the vegetation cleaning, surface scraping, trenching, excavation or construction phases of the development, when resources not visible at the time of the surface assessment may be exposed.

11. Public Participation



NOTICE OF PHASE 1 HERITAGE IMPACT ASSESSMENT (HIA) APPLICATION



Notice is hereby given that an application for a Phase 1 Heritage Impact Assessment (HIA) in terms of Section 38 of the National Heritage Resources Act (Act 25 of 1999) will be lodged with the South African Heritage Resources Agency (SAHRA) and *Amafa aKwaZulu Natali* (more commonly known as AMAFA)

PROJECT NAME: Heritage Impact Assessment for the proposed Mpushini Park Housing Development.

NAME OF THE PROPONENT: uMlalazi Municipality

LOCATION: The study area is located near Eshowe in the uMlalazi Local Municipality, King Cetshwayo District of the KwaZulu Natal Province.

ANY ENQUIRIES SHOULD BE REFERED TO:

G&A Heritage Properties (Pty) Ltd.
Public Participation Registration and Enquiries
Lesley Gaigher

pp@gaheritage.co.za

+27 82 551 5082

P.O. Box 522

Louis Trichardt, 0920

Figure 41. Site Notice 1 (July 2020)

NOTICE OF PHASE 1 HERITAGE IMPACT ASSESSMENT (HIA) APPLICATION



Notice is hereby given that an application for a Phase 1 Heritage Impact Assessment (HIA) in terms of Section 38 of the National Heritage Resources Act (Act 25 of 1999) will be lodged with the South African Heritage Resources Agency (SAHRA) and *Amafa aKwaZulu Natali* (more commonly known as AMAFA)

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Public Participation Registration and Enquiries

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Figure 42. Site Notice 2: Additional Site (November 2020)



Figure 43. Site Notice placed at a point of interest

12. References

General Information for archaeologists and palaeontologists on the National Heritage Resources Act (No 25 of 1999).

National Heritage Resources Act (No. 25 of 1999).

National Heritage Resources Act (No 25 of 1999). 2002. Regulations.

SAHRA. 2002. General Introduction to surveys, impact assessments and management plans.

Ahler, S.A. 1977. Functional analysis of nonobsidian chipped stone artefacts: terms, variables and quantification. In: Hayden, B. (ed.). *Lithic use-wear analysis*: 301-328. New York: Academic Press.

Aikman, H, Baumann, N, Winter, S and Cliff H. 2005. A state of the cultural historical environment study: Unpublished report compiled by Overstrand Heritage and Landscape Consortium for the Overstrand District Municipality.

Booth, A. R. ed. 1967. *Journal of the Rev. George Champion*. Cape Town: Struik.

Brain, C.K. 1981. *The hunters or the hunted? An introduction to African cave taphonomy*. Chicago: Chicago University Press.

Cory, Sir G. E. 1926. *The Diary of the Rev. Francis*

Cronin, M. 1975. *Mgungundlovu*. Unpublished B.A. (Hons.) thesis: University of Cape Town.

Cruz-Uribe, K. & Klein, R.G. 1994. Chew marks and cut marks on animal bones from the Kasteelberg B and Dune Field Midden Later Stone Age sites, Western Cape Province, South Africa. *Journal of Archaeological Science* 21: 35-49.

Dennis Moss Partnerships Inc. 2003. *Overberg Spatial Development Framework*. Department of Planning, Local Government and Housing. 2000. *Bio-regional Planning Framework for the Western Cape Province*.

Gardiner, Allen F. 1966. *Narrative of a Journey to the Zoolu Country in South Africa*. Cape Town: Struik (Reprint).

Greenfield, H. J., van Schalkwyk, L. O. and Jongsma, T. L. 2000. Surface and subsurface reconnaissance at Ndongondwane: preliminary results of the 1995-97 field seasons. *Southern African Field Archaeology*, 9: 5-16.

Greenfield, H. J. and van Schalkwyk, L. O. 2003. Intra-settlement social and economic organization of Early Iron Age farming communities in southern Africa: view from Ndongondwane. *Azania*, 38: 121-37.

Hart, T. & Miller, D. 1994. Phase 1 archaeological and palaeontological survey of the proposed mining area on the farm Velddrif 110, Velddrif, Western Cape Province. Report prepared by the Archaeology Contracts Office, University of Cape Town, for Lime Sales Limited.

Huffman, T. N. 1993. Broederstroom and the Central Cattle Pattern. *South African Journal of Science*, 89: 220-26.

Huffman, T. N. 2001. The Central Cattle Pattern and interpreting the past. *Southern African Humanities*, 13: 19-35.

Kirby, P. R. 1955. *Andrew Smith and Natal*. Cape Town: Van Riebeeck Society.

Krige, E. J. 1936. *The social system of the Zulus*. Pietermaritzburg: Shuter and Shooter.

Kent, S. 1998. Invisible gender-invisible foragers: hunter-gatherer spatial patterning and the southern African archaeological record. In: Kent, S. (ed.) *Gender in African prehistory*: 39-67. California: Altamira Press.

Lombard, M. 2003. Closer to the point: macro-fracture, micro-wear and residue analyses of Middle Stone Age lithic points from Sibudu Cave, KwaZulu-Natal, South Africa. Unpublished M.Sc. thesis, University of the Witwatersrand.

Lombard, M., Parsons, I. & Van der Ryst, M.M. 2004. Middle Stone Age lithic point experimentation for macro-fracture and residue analysis: the process and preliminary results with reference to Sibudu Cave points. *South African Journal of Science* 100: 159-166

Japha, D., Japha, V., Le grange, L & Todeschini, F. *Mission Settlements in South Africa: A Report on their historical background and prospects for conservation*. University of Cape Town.

Maggs, T. O. 1980. The Iron Age sequence south of the Vaal and Pongola Rivers: some historical implications. *Journal of African History*, 21: 1-15.

Maggs, T. O. 1984a. Ndongondwane; a preliminary report on an Early Iron Age site on the lower Tugela River. *Annals of the Natal Museum*, 26: 71-94.

Maggs, T. O. 1984b. Iron Age settlement and subsistence patterns in the Tugela River Basin, Natal. In *Frontiers of Southern African Archaeology Today* (eds M. Hall, G. Avery, D. M. Avery, M. L. Wilson and A. J. B. Humphreys). *Cambridge Monographs in African Archaeology* 10. Oxford: British Archaeological Reports, International Series 207, pp. 194-206.

Maggs, T. O. 1984c. The Iron Age south of the Zambezi. In *Southern African Prehistory and Paleoenvironments* (ed. R. Klein). Rotterdam: Balken, pp. 329-60.

Maggs, T. O. 1989. The Iron Age farming communities. In *Natal and Zululand: From Earliest Time to 1910: A New History* (eds A. Duminy and B. Guest). Pietermaritzberg: University of Natal Press/ Shuter & Shooter, pp. 28^8.

Maggs, T. O. 1995. The Early Iron Age in the extreme south: some patterns and problems. *Azania*, 29/30: 171-8.

Maggs, T. and Ward, V. 1984. Early Iron Age sites in the Muden area of Natal. *Annals of the Natal Museum*, 26: 105-40.

Maggs, T., Oswald, D., Hall, M. and Ruther, H. 1986. Spatial parameters of Late Iron Age settlements in the upper Thukela Valley. *Annals of the Natal Museum*, 27: 455-79.

Owen, M.A. Cape Town: Van Riebeeck Society.

Spenneman, D. 2006. Gauging community values in Historic preservation. *CRM: The Journal of Heritage Stewardship* 3(2):6-20.

Oberholster, J. J. & Walton, J. n.d. *Dingane's Kraal - Mngungundlovu*. National Monuments Commission Booklet.

Retief, P. in litt. Letter dated November 18, 1837. In Campbell, K. n.d.: *Vmngungundlovu- Dingaarns Kraal*: 41. Unpublished MS. Killie Campbell Africana Library, Durban.

Stuart, J. n.d. Unpublished papers. Killie Campbell African Library, Durban.

Stuart, J. & McMalcolm, D. eds. 1969. The diary of Henry Francis Fynn. Pietermaritzburg: Shuter and Shooter.

Wadley, L & Jacobs, Z. 2004. Sibudu Cave, KwaZulu-Natal: Background to the excavations of Middle Stone Age and Iron Age occupations. South African Journal of Science 100: 145-151.

Webb, C. de B., & Wright, J. 1977. The Stuart Archives, Vol. I. Pietermaritzburg: Natal University Press.

Whitelaw, G. D. 1994. KwaGandaganda: settlement patters in the Natal Early Iron Age. Natal Museum Journal of Humanities, 6: 1-64.

Wood, W. 1840. Statements respecting Dingaan, King of the Zoolahs, with some particulars relative to themassacres of Messrs. Retief and Biggars, and their parties. Cape Town: Collard & Co.