



Phase 1 Heritage Impact Assessment for the proposed construction of an 88kv distribution powerline from the existing Straatsdrift substation to the proposed Silwerkraans substation within the Ramotshere Moiloa, Moses Kotane and Kgetlengrivier Local Municipalities, North West Province.



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DECLARATION OF INDEPENDENCE

This report has been compiled by Makhosazana Mngomezulu, principal archaeologist and heritage consultant. The views expressed in this report are independent of the author and no other interest was displayed during the decision making process for the proposed construction of an 88kv distribution powerline from the existing Straatsdrift substation to the proposed Silwerkraans substation.

SIGNATURE:

A handwritten signature in black ink, appearing to read "M. Mngomezulu", is written over a faint horizontal line.

TERMINOLOGY

BP	Before Present
EIA	Early Iron Age
MIA	Middle Iron Age
LIA	Late Iron Age
ESA	Early Stone Age
MSA	Middle Stone Age
LSA	Late Stone Age
ya	years ago
Ibid	<i>Ibidem</i> , Latin word meaning same as the previous source
HIA	Heritage Impact Assessment
EAP	Environmental Assessment Practitioner
NWPHRA	North West Provincial Heritage Resources Authority
SAHRA	South African National Resources Agency
SAHRIS	South African Heritage Resources Information System
NHRA	National Heritage Resources Act
SAPS	South African Police Services

DEFINITIONS

ESA dates between 2 million years ago to 2 00 000 BP. Industries associated with this time period includes Oldowan, Acheulean and Fauresmith. ESA stone tools include hammer stones, flakes, cores, handaxes and cleavers (Pelser 2009).

MSA dates between 2 00 000 and 25 000 to 20 000 BP, this varies with location. Industries associated with this period includes the Howieson's Poort. The stone tools which characterize this period include scrapers, blades, points and flake.

LSA which dates between 25 000 and 20 000 to 2 000 BP. Stone tools of this period are characterized by their small size; this includes backed knives and borers (Pelser 2009).

EIA dates to AD 200 – 900 (Huffman 2007).

MIA dates to AD 900 – 1300 (ibid).

LIA dates to AD 1300 – 1840 (ibid).

EXECUTIVE SUMMARY

Vungandze Projects was appointed by Baagi Environmental Consultancy to conduct a heritage impact assessment for the proposed construction of an 88kv distribution powerline from the existing Straatsdrift substation to the proposed Silwerkraans substation within the Ramotshere Moiloa, Moses Kotane and Kgetlengrivier Local Municipalities, North West Province.

According to Section 38 of the National Heritage Resources Act (Act 25 of 1999) “(1) Subject to the provisions of subsections (7), (8) and (9), any person who intends to undertake a development categorised as-

- (a) the construction of a road, wall, powerline, pipeline, canal or other similar form of linear development or barrier exceeding 300m in length...” (see Appendix A for Section 38 of the Act), should conduct a Phase 1 Heritage Impact Assessment.

This is to determine if there are any heritage resources within the route of the proposed powerline and how they will be impacted. If any heritage resources are found, mitigation measures and recommendations for the protection of such resources need to be provided. The report will be submitted to the North West Provincial Heritage Resources Authority for comments and for decision making as per the National Heritage Resources Act (Act No 25 of 1999).

Upon completion of the physical survey, heritage resources were found within the proposed route and a 100m radius thereof.

RECOMMENDATION

- During the construction phase, the contractor should keep within the perimeters of the proposed route to avoid impacting the heritage resources found in close proximity;
- Fences for the cemeteries can be used as a barricade. This means no construction should take place inside the fence to protect the graves;
- The contractor should induct all employees on the importance of heritage sites and resources that they should not be impacted in any way. This also includes any heritage resources that may be found during the construction phase that were not identified during the physical survey;
- Should any heritage resources be found on site during the excavation; be it archaeological artifacts such as stone tools and pottery; graves and structures; the contractor should cease construction immediately and contact the client. A heritage

expert should be called to site to assess the significance of those heritage resources and the impacts of the proposed activities on the later, and then provide mitigation measures.

- The possibility of uncovering unearthed burial grounds and graves during excavation are high, given that the disturbance of the proposed route is restricted to the existing powerline and majority of the area remains undisturbed. Should potential human remains be found on site, the contractor should cease construction immediately and the South African Police Service and the client should also be contacted. Should the remains be below 60 years old since time of death, it is considered a forensic case and further investigations will be conducted by the police. Should the remains be above 60 years old since time of death, it becomes a South African Heritage Resources Agency case. This means an archaeologist should be called on site to remove the remains at the expense of the client.
- It is recommended that the Alternative Corridor 1 route be selected as the Alternative Corridor 2 has heritage resources within the proposed line. Should the client decide to opt for Alternative Corridor 2, a phase 2 heritage impact assessment should be conducted to thoroughly document the demolished settlement houses on the route that date to over 100 years, prior to removing them.

CONCLUSION

During the physical survey conducted on the 16 & 17 June 2017, heritage resources were found within and outside the proposed route. It was assumed that the proposed routes may be rich in heritage resources seeing that the area is less disturbed from Google Earth Maps. However, the area turned to be more disturbed than previously anticipated and less evidence of old settlements were observed. Given this, the proposed routes are not highly sensitive from a heritage perspective.

It is concluded based on the findings of the survey that the construction may proceed preferably on the proposed Alternative Corridor 1 route provided the proposed mitigation measures are adhered to. The final report will be submitted to NWPHRA for review and decision making. Based on the findings we recommend that NWPHRA grant Eskom the approval to proceed with the construction of an 88kv distribution powerline from the existing Straatsdrift substation to the proposed Silwerkraans substation in terms of the Heritage Resources Act (Act No.25 of 1999). (Act No.25 of 1999).

PROJECT STRUCTURE

Introduction	<ul style="list-style-type: none">• Report background• Methodology• Assumptions & limitations
Project locality	<ul style="list-style-type: none">• Location (include mapping)• Images of the receiving area• Heritage Background
Findings	<ul style="list-style-type: none">• Types of findings (if any)• Level of significance• Potential impacts
Discussion	<ul style="list-style-type: none">• Evaluation of findings in relation of the historical background of the study area
Recommendations & conclusion	<ul style="list-style-type: none">• Mitigation measures

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1. INTRODUCTION

Zeerust 88kV network is supplied by a radial 132kV feed from Watershed MTS to Zeerust DS, should it be out then most of Zeerust supply area is without supply about 5600 customers including key customer (mines) Under N-1 contingency, Slurry PPC – Zeerust line can only supply up until Zeerust DS and not the entire Zeerust supply area. Straatsdrift substation form part of Zeerust 88kV network which is fed by a radial line, the substation is feeding 11651 customers. Straatsdrift substation is one of the substations that have a significant contribution to the SAIDI and SAIFI of NWOU. The proposed solution is to build a Silwerkraans –Straatsdrift 88kV line and include the following:

- Establish 88kV busbar and install a 80MVA 132/88kV transformer at Silwerkraans substation;
- Establish a 88kV feeder bay at Straatsdrift substation;
- Establish a 88kV feeder bay at Silwerkraans substation.

The corridor to be studied is 31 metres wide. The Alternative Corridor 1 line = 47.109km and the Alternative Corridor 2 line = 32.883km.

According to Section 38 of the National Heritage Resources Act (Act 25 of 1999) “(1) Subject to the provisions of subsections (7), (8) and (9), any person who intends to undertake a development categorised as-

- (a) the construction of a road, wall, powerline, pipeline, canal or other similar form of linear development or barrier exceeding 300m in length...” (see Appendix A for Section 38 of the Act), should conduct a Phase 1 Heritage Impact Assessment.

This is to determine if there are any heritage resources within the route of the proposed pipeline and how they will be impacted. If any resources are found, mitigation measures and recommendations for the protection of such resources needs to be provided. The report will be submitted to the North West Provincial Heritage Resources Authority for comments and for a decision as per the National Heritage Resources Act (Act No 25 of 1999).

The aim of this report is to outline the heritage resources found; anticipated impacts of the proposed construction of an 88kv distribution powerline from the existing Straatsdrift substation to the proposed Silwerkraans substation; and provide mitigation measures as a way forward.

2. TERMS OF REFERENCE (TOR)

The approach used for this report was:

- To undertake a Phase 1 HIA in accordance with the National Heritage Resources Act, 1999 (Act no. 25 of 1999);
- To identify and map all heritage resources (if any) in the affected area and its surroundings, as defined in Section 3 of the National Heritage Resources Act (Act No. 25 of 1999), including archaeological sites on or close (within 100m) to the proposed site;
- To assess the significance of any identified resources in terms of the heritage assessment criteria as set out in the South African Heritage Resources Agency (SAHRA) regulations;
- To provide mitigation measures to safeguard heritage resources; and
- To comply with specific requirements and guidelines of the NWPRHA.

3. METHODOLOGY

The physical survey was conducted on 16 & 17 June 2017. This report was prepared according to the NHRA. Background research of the study area was conducted using literature such as books, journals; previously conducted HIA's in the study area and the internet before and after the site visit. The purpose of the research prior to the physical survey was to acquire information on what to expect in the study area, and the site visit itself was completed to identify heritage resources that may be impacted on due to the proposed construction. The survey was conducted by foot and driving to locate any heritage resources. On site, community members (especially those in farms/herders) were asked if they know of any grave sites or old buildings in the surrounding. For the first portion of both the Alternative Corridor 1 and Alternative Corridor 2, near Pella; community members confirmed of a cemetery in Pella which is far for the study area. A hand-held Garmin GPS was used to take coordinates and route tracking; and photographs were also taken. Google Earth was used to create maps and locate findings in relation to the proposed routes.

Heritage resource means any place or object of cultural significance (NHRA). The NHRA was used as a source of reference to identify what is known as a heritage resource (see Appendix A for list of heritage resources).

The determination of the effects of environmental impact on an environmental parameter is determined through a systematic analysis of the various components of the impact. This is undertaken using information that is available to the environmental practitioner through the process of the BAR and/or WULA. The impact evaluation of predicted impacts was undertaken through an assessment of the significance of the impacts. This is in line with specialist requirements as required by the client. For example, the request that: -

The impact methodology (should) concentrate on addressing key issues. This methodology to be employed in the report thus results in a circular route, which allows for the evaluation of the efficiency of the process itself.

The following table from SAHRA Regulations will be used to grade the significance of the heritage resources found.

Table 1: Site significance rating according to SAHRA.

FIELD RATING	GRADE	SIGNIFICANCE	RECOMMENDED MITIGATION
National Significance (NS)	Grade 1	-	Conservation; National Site nomination
Provincial Significance (PS)	Grade 2	-	Conservation; Provincial Site nomination
Local Significance (LS)	Grade 3A	High Significance	Conservation; Mitigation not advised
Local Significance (LS)	Grade 3B	High Significance	Mitigation (Part of site should be retained)
Generally Protected A (GP.A)	-	High / Medium Significance	Mitigation before destruction
Generally Protected B (GP.B)	-	Medium Significance	Recording before destruction

FIELD RATING	GRADE	SIGNIFICANCE	RECOMMENDED MITIGATION
Generally Protected C (GP.A)	-	Low Significance	Destruction

The following Assessment Criteria is used for Impact Assessment

Impacts can be defined as any change in the physical-chemical, biological, cultural and or socio-economic environmental system that can be attributed to humans. The significance of the aspects/impacts of the process will be rated by using a matrix derived from Plomp (2004) and adapted to some extent to fit this process. These matrixes use the consequence and the likelihood of the different aspects and associated impacts to determine the significance of the impacts.

The significance of the impacts will be determined through a synthesis of the criteria below:

Probability: describes the likelihood of the impact actually occurring

- **Improbable:** the possibility of the impact occurring is very low, due to the circumstances, design or experience.
- **Probable:** there is a probability that the impact will occur to the extent that provision must be made therefore.
- **Highly probable:** it is most likely that the impact will occur at some stage of the development.
- **Definite:** the impact will take place regardless of any prevention plans and there can only be relied on mitigatory measures or contingency plans to contain the effect.

Duration: the lifetime of the impact

- **Short Term:** the impact will either disappear with mitigation or will be mitigated through natural processes in a time span shorter than any of the phases.
- **Medium Term:** the impact will last up to the end of the phases, where after it will be negated.
- **Long Term:** the impact will last for the entire operational phase of the project but will be mitigated by direct human action or by natural processes thereafter.

- **Permanent:** the impact is non-transitory. Mitigation either by man or natural processes will not occur in such a way or in such a time span that the impact can be considered transient.

Scale: the physical and spatial size of the impact

- **Local:** the impacted area extends only as far as the activity, e.g. footprint
- **Site:** the impact could affect the whole or measurable portion of the above mentioned properties.
- **Regional:** the impact could affect the area including the neighbouring residential areas.

Magnitude/Severity: Does the impact destroy the environment, or alter its function

- **Low:** the impact alters the affected environment in such a way that natural processes are not affected.
 - **Medium:** the affected environment is altered, but functions and processes continue in a modified way.
 - **High:** function or process of the affected environment is disturbed to the extent where it temporarily or permanently ceases.

Significance: This 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.

- **Negligible:** the impact is non-existent or unsubstantial and is of no or little importance to any stakeholder and can be ignored.
- **Low:** the impact is limited in extent, has low to medium intensity; whatever its probability of occurrence is, the impact will not have a material effect on the decision and is likely to require management intervention with increased costs.
- **Moderate:** the impact is of importance to one or more stakeholders, and its intensity will be medium or high; therefore, the impact may materially affect the decision, and management intervention will be required.
- **High:** The impact could render development options controversial or the project unacceptable if it cannot be reduced to acceptable levels; and/or the cost of management intervention will be a significant factor in mitigation.

The significance is calculated by combining the criteria in the following formula:

Sum (Duration, Scale, Magnitude) x Probability (*Table -2*)

S = Significance weighting; Sc = Scale; D = Duration; M = Magnitude; P = Probability

Table 2: The significance weighing for each potential impact are as follows:

Aspect	Description	Weight
Probability	Improbable	1
	Probable	2
	Highly Probable	4
	Definite	5
Duration	Short term	1
	Medium term	3
	Long term	4
	Permanent	5
Scale	Local	1
	Site	2
	Regional	3
Magnitude/Severity	Low	2
	Medium	6
	High	8
Significance	Sum (Duration, Scale, Magnitude) x Probability	
	Negligible	≤20
	Low	>20≤40
	Moderate	>40≤60
	High	>60

The significance of the heritage resources will be rated without mitigation measures (WOM) and with mitigation (WM) measures for the operational phase.

3.1 Assumptions

It was assumed that the proposed routes may be rich in heritage resources seeing that the area is less disturbed from Google Earth Maps. Difficulty in accessing certain parts of the proposed lines was also anticipated.

3.2 Limitations

It was not easy accessing other portions of the lines; either the area had dense vegetation, no access roads or preferred access road had locked gates.

4. LOCALITY AREA

The proposed route traverse from Silwerkraans on the east to Straatsdrift Substation on the northwest. The townships include Pella, Silwerkraans, Straatdrift and Koffiekraal which incorporates Ramotshere Moiloa, Moses Kotane and Kgetlengrivier Local Municipalities in the North West Province (see figure 1 and 2). The Alternative Corridor 1 (yellow line) traversed mostly where there is minimal human activity whereas Alternative Corridor 2 (green line) traversed in areas where more human activity was observed.

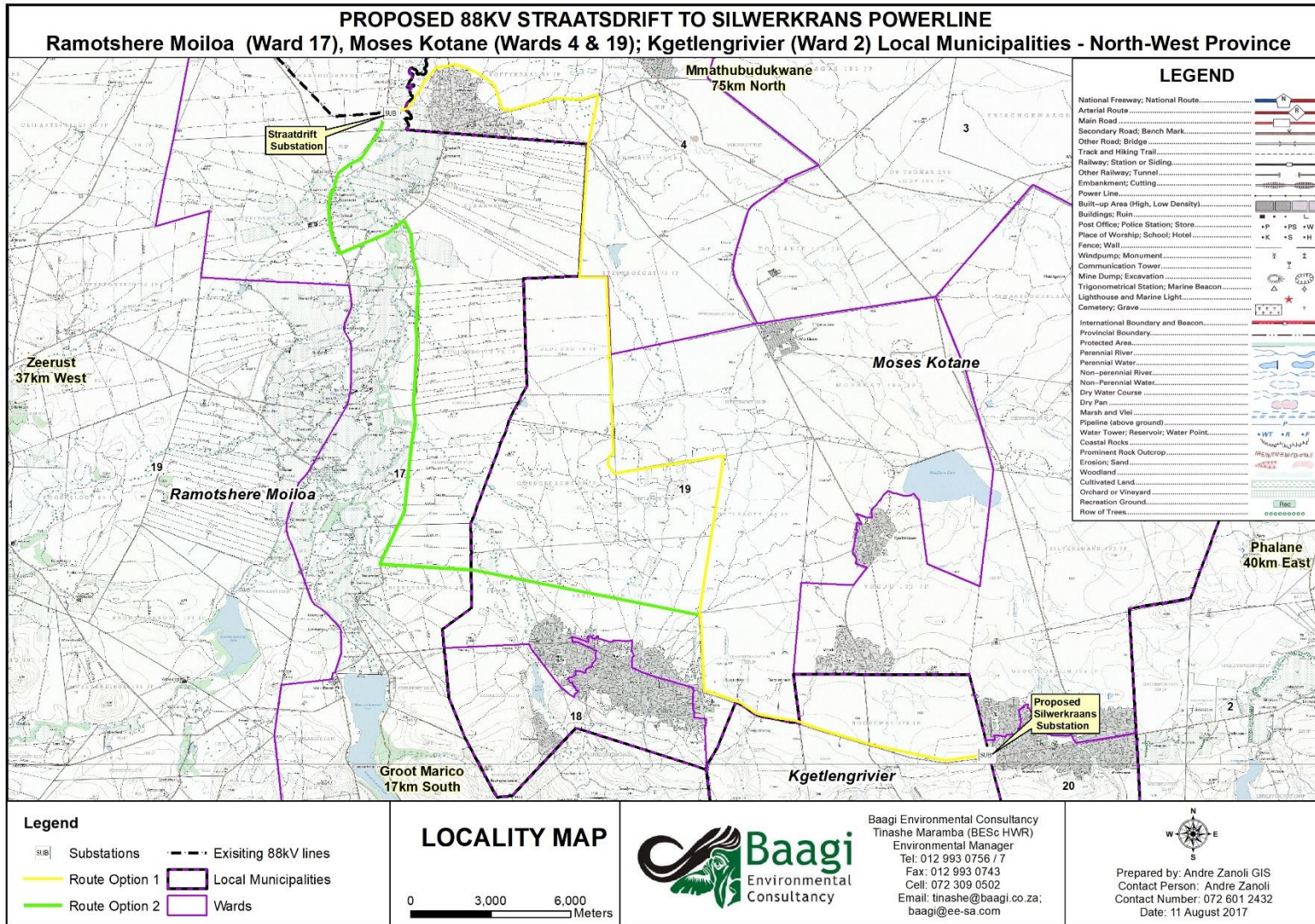


Figure 1: Map of the proposed 88kV Straatsdrift to Silwerkrans Powerline provided for by Baagi Environmental Consultancy

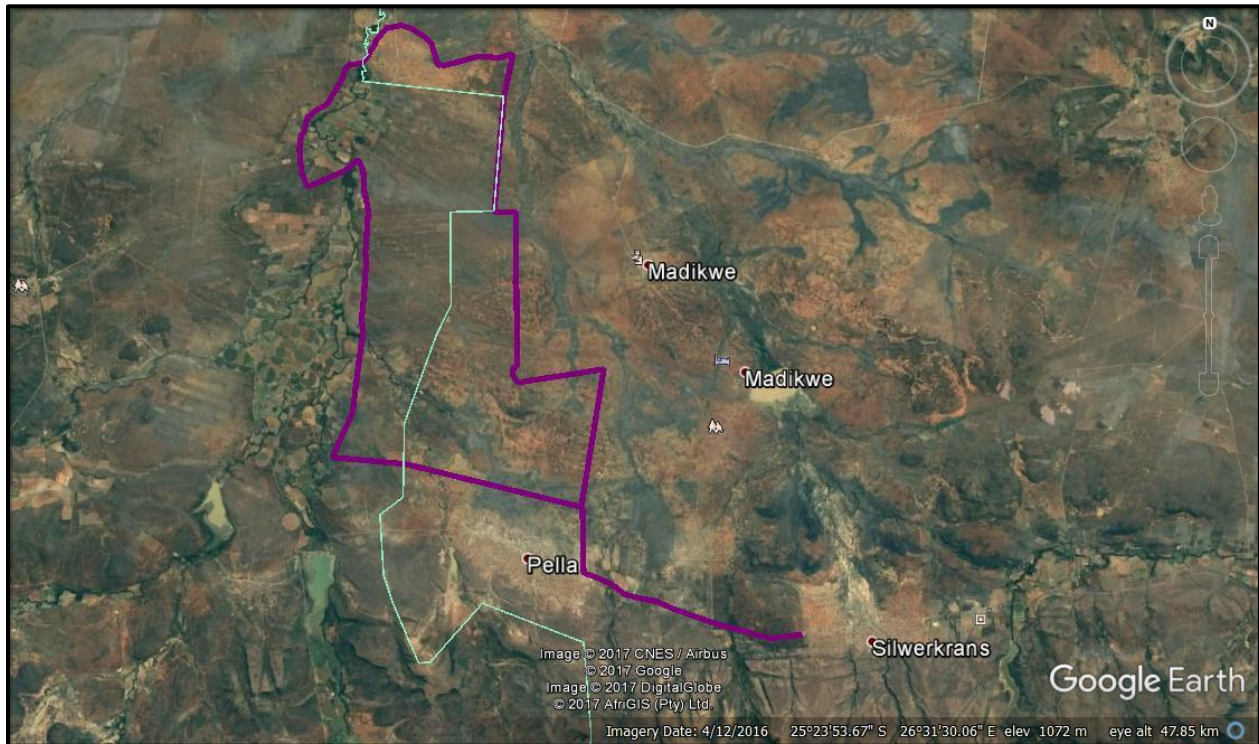


Figure 2: Aerial view of the proposed 88kV Straatsdrift to Silwerkrans Powerline.

5. HISTORICAL BACKGROUND OF THE STUDY AREA

History of human activity in South Africa, as in all parts of the world, dates to millions of years old. It is important to elaborate as far back in time to enable the reader to understand what is meant by archaeological material and why is it declared a heritage resource. Archaeological materials are divided into two periods, the Stone Age and the Iron Age. Late Iron Age marks the transition between prehistory and history, a period of colonial era until recent.

5.1 Stone Age

The Stone Age is a period that dates between 2 million years ago (ya) to 2000 ya. Due to the vast character found within stone tools of this period, it was then divided into three phases; Early Stone Age (ESA), Middle Stone Age (MSA) and the Late Stone Age (LSA). ESA dates between 2 million ya and 2 00 000 Before Present (BP). Industries associated with this time period includes Oldowan, Acheulean and Fauresmith. ESA stone tools include hammer stones, flakes, cores, handaxes and cleavers (Pelsler 2009). The more refined stone tools appeared during the MSA. MSA dates between 2 00 000 and 25 000 to 20 000 BP, this varies with location. Industries

associated with this time period includes the Howieson's Poort. The stone tools which characterise this period include scrapers, blades, points and flake. Lastly is the LSA which dates between 25 000 and 20 000 to 2 000 BP. Stone tools of this period are characterised by their small size; this includes backed knives and borers (Pelser 2009).

Based on the site survey such heritage resources were not visible on site, this is due to the area being severely disturbed by the growth and development of the area.

5.2 Iron Age

According to Huffman (2007) Iron Age marks the early evidence of farming community in southern Africa. Animal husbandry, crop farming, pottery and metal working were introduced which in due time liberated hunter gatherers to change their way of life which is less mobile (Carruthers 1990). Due to vast technological discrepancies and settlement pattern within this period, it was divided into three. The Early Iron Age (EIA) dates to AD 200 – 900, Middle Iron Age (MIA) dates to AD 900 – 1300, and the Late Iron Age (LIA) dates to AD 1300 – 1840 (Huffman 2007).

The study area falls within the Late Iron Age period. Archaeological material such as pottery and furnace was found in Madikwe. According to Huffman (2007) Sotho-Tswana speakers originated in AD1350 and can be divided into four clusters namely; Hurutse, Kgatla, Rolong and the Fokeng. For the purpose of this report, focus will be the Hurutse who were the first occupants in the area. The Hurutse cluster includes those groups descended from Malope and his father Masilo who lived at Rathateng near the Marico and Crocodile confluence between about AD 1440 and 1560. These groups further claim to have originated from the waterhole of Lowe in Botswana (Legassick 1969b).

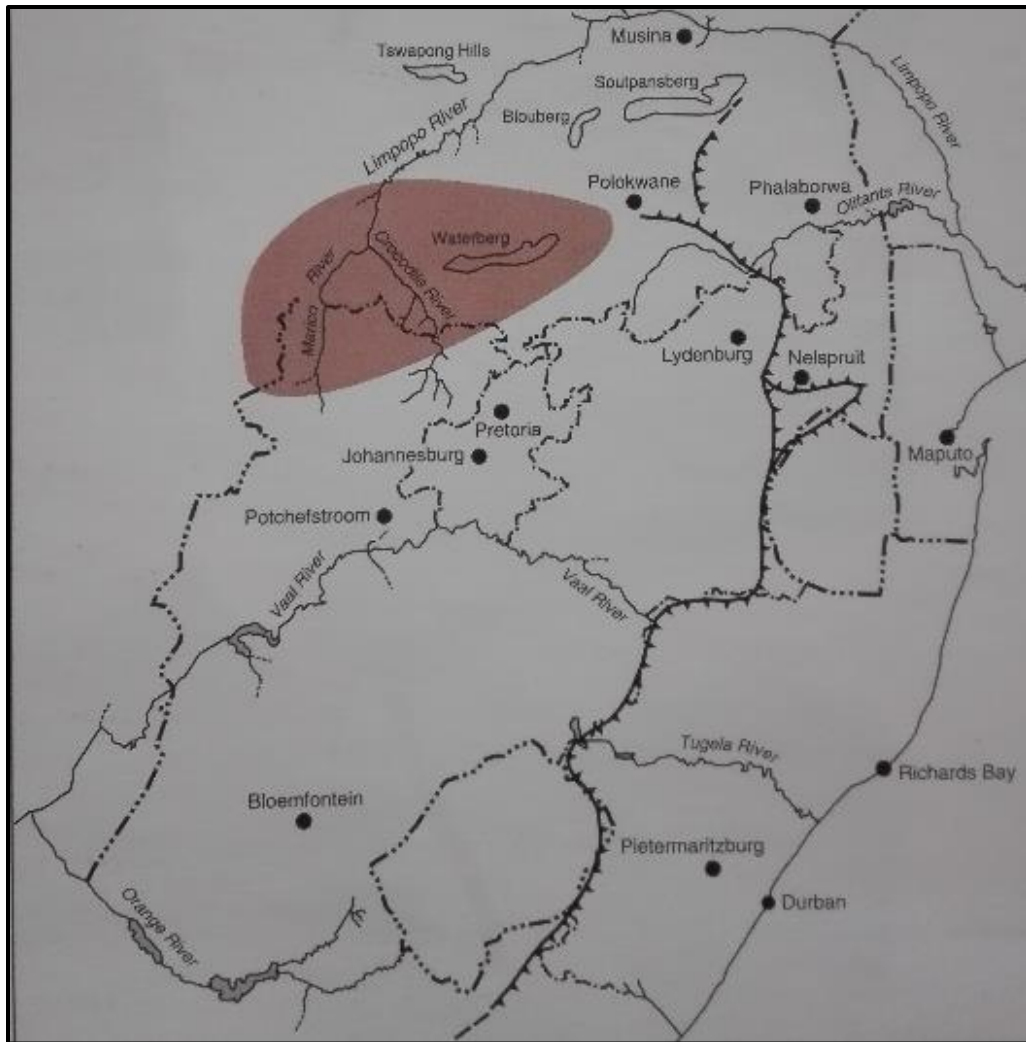


Figure 3: Map of distribution of the Madikwe pottery.

Pottery associated with this area is classified under the Urewe tradition, the eastern stream from west Africa. Branches under this tradition include Kwale, Nkope, Blackburn and Moloko; the report will focus on the Moloko branch. Furthermore, this branch divides to Icon, which then sub-divided to Letsibogo, Olifantspoort, Thabeng and Madikwe. Madikwe pottery is characterised by multiple bands of cord impressions, incisions, stabs and punctates separated by colour (Huffman 2007). Such pottery should be on the looked out during construction phase, especially when excavating.



Figure 4: Madikwe pottery characteristics.

5.3 History of the study area

The two Municipalities Moses Kotane and Ramotshere Moiloa Local Municipalities were named in memory of the two activists who were born the area.

The North West part of South Africa, bordering on the Botswana was inhabited by the Hurutshe since at least end of the eighteenth century. In the nineteenth century, they were forced to submit to Boer Trekkers and pay taxes, provide labour and assist commandos against independent Tswana to the west. In 1848, the followers of chief Moiloa were given 125,583 of land by the Trekker leader Andries Potgiter, provided they remain loyal and obedient. In the 1950s, the Hurutse community lived largely in the Marico District (Badat 2012).

Chief Abram Ramotshere Pogiso Moiloa, a key figure in the Bahurutshe resistance of the 1950s. He was born in 1910 and became chief in 1932 at the age of 22. Conflict between the

Hurutshe and the apartheid state came into the open in the early 1950s when Verwoerd summoned chiefs, including Kgosi Moila, to Rustenberg to secure their agreement to the implementation of Bantu Affairs.

During 1955, Kgosi Moiloa closed the Lutheran church and boycotted its centenary celebrations, and railed against the Bantu Authorities Act, the Bantu Education Act and the suggested removal of the Hurutshe black spots. Because he was considered a threat of the Native Affairs Department he was placed under investigation, with a view to requesting the department to remove him from the chieftainship and banish him from Linokana Reserve (Zeerust), in Marico District. A subsequent inquiry conducted by the Native Commissioner for Pilansberg found Abraham guilty of eighteen charges of misconduct.

His banishment order was revoked on 1 January 1971. Today, Ramotshere Moiloa formerly known as Zeerust Local Municipality was named in honor of his contributions to the struggle for democracy (South African History Online).

Moses M. Kotane a General secretary of the Communist Party of South Africa and Treasurer General of the African National Congress was born at Tamposstad in the Rustenburg district of the western Transvaal in 1905. Kotane came from a devoutly Christian peasant family of Tswana origin. Largely self-taught, he received only a few years of formal schooling, but became an insatiable reader. Later as a young worker he enrolled in the Communist-run night school in Ferreirastown, Johannesburg, where he became known for his ability to master the most abstruse political writings.

In 1929 Kotane joined the Communist Party of South Africa (CPSA), and soon became both the vice-chairman of the trade union federation and a member of the party's political bureau. As one of the CPSA's most promising African recruits in a period when the party was promoting the goal of a Native Republic, Kotane was offered an opportunity to go to the Soviet Union, and for a year in the early 1930s he studied at the Lenin School in Moscow.

In early 1963, he left South Africa for Tanzania, where he became the treasurer-general of the ANC in exile. In elections held in Tanzania in April 1969 he was returned to the national executive committee. He later suffered a stroke and went for treatment to Moscow, where he remained until his death in 1978 (South African History Online).



Figure 5: Image of Moses M Kotane.

6. FINDINGS

The proposed route, both Alternative Corridor 1 and Alternative Corridor 2 traverse an area that is already disturbed by the clearing of vegetation; existing powerlines, one of which is currently under construction known as Straatsdrift – Pella line (as confirmed by Eskom). Upon completion of the physical survey the specialist identified several significant heritage resources that will need to be mitigated prior to commencement of the construction (see figure 3-13). Upon speaking to Gerhard, Mowana guesthouse and farm owner, he was kind enough to drive us along the proposed route that was within his farm, showed us the old settlement houses and confirmed a grave in his farm which is situated far from the proposed Alternative Corridor 2 route. Within the heritage resources found, only one falls within the proposed line and the rest fall within a 100m radius of the proposed powerline. The table below lists all heritage resources found on site and the distance in relation to the proposed powerline.

Table 3: Table of findings

Heritage Resources found	Coordinates	Distance to proposed line
Remains of a stonewall	25°29'55.20"S 26°34'55.50"E	± 80m
Foundation/remains of a house	25°27'56.20"S 26°30'14.50"E	± 80m
Dilapidated old house	25°27'12.90"S 26°30'14.90"E	± 17m
Old settlement houses	25°25'57.20"S 26°23'51.10"E	Within the proposed line

Old dilapidated houses	25°19'06.05"S 26°24'11.97"E	± 90m
Old dilapidated house	25°17'45.00"S 26°23'19.10"E	± 30m
Graveyard 1	25°16'17.50"S 26°24'37.20"E	± 26m
Graveyard 2	25°16'49.50"S 26°26'14.90"E	± 150-200m

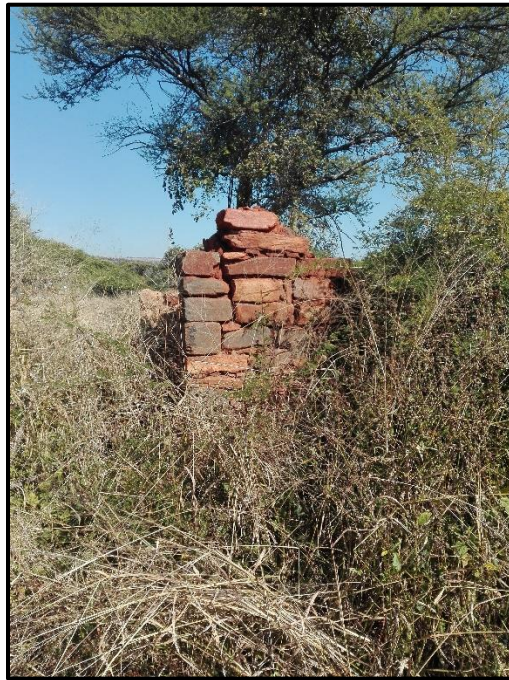


Figure 6: Remains of a stonewall after Silwerkraans towards Pella.



Figure 7: Foundation or remains of a house in Pella before split of Alternative Corridor 1 and Alternative Corridor 2 line.



Figure 8: Dilapidated structure in Pella before split of Alternative Corridor 1 and Alternative Corridor 2 line.



Figure 9: Dilapidated house towards splitting of Alternative Corridor 1 and Alternative Corridor 2 line.



Figure 10: Abandoned house before Straatsdrift substation.



Figure 11: Old settlement houses in opposite Mowana accomodation.



Figure 12: Grave site 1 in Koffiekraal.



Figure 13: Picture taken outside the fence of grave site 2 in Koffiekraal.

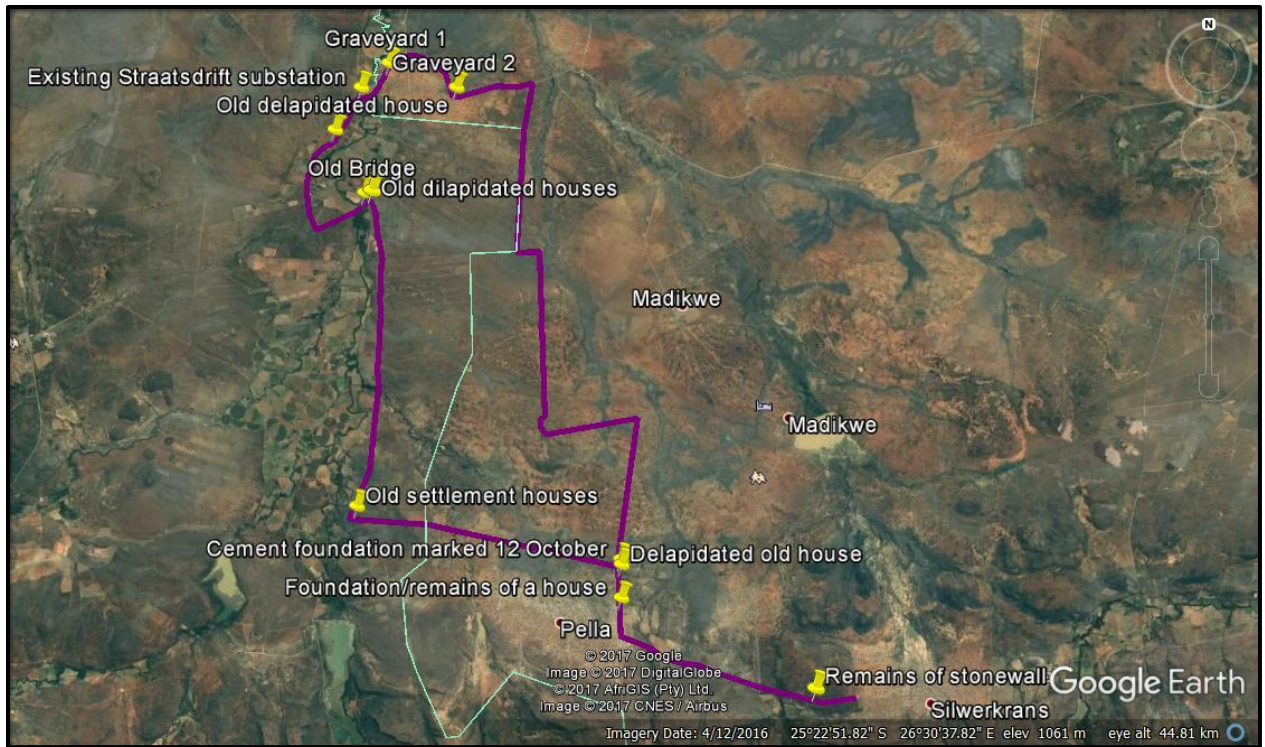


Figure 14: Aerial view of findings on site.

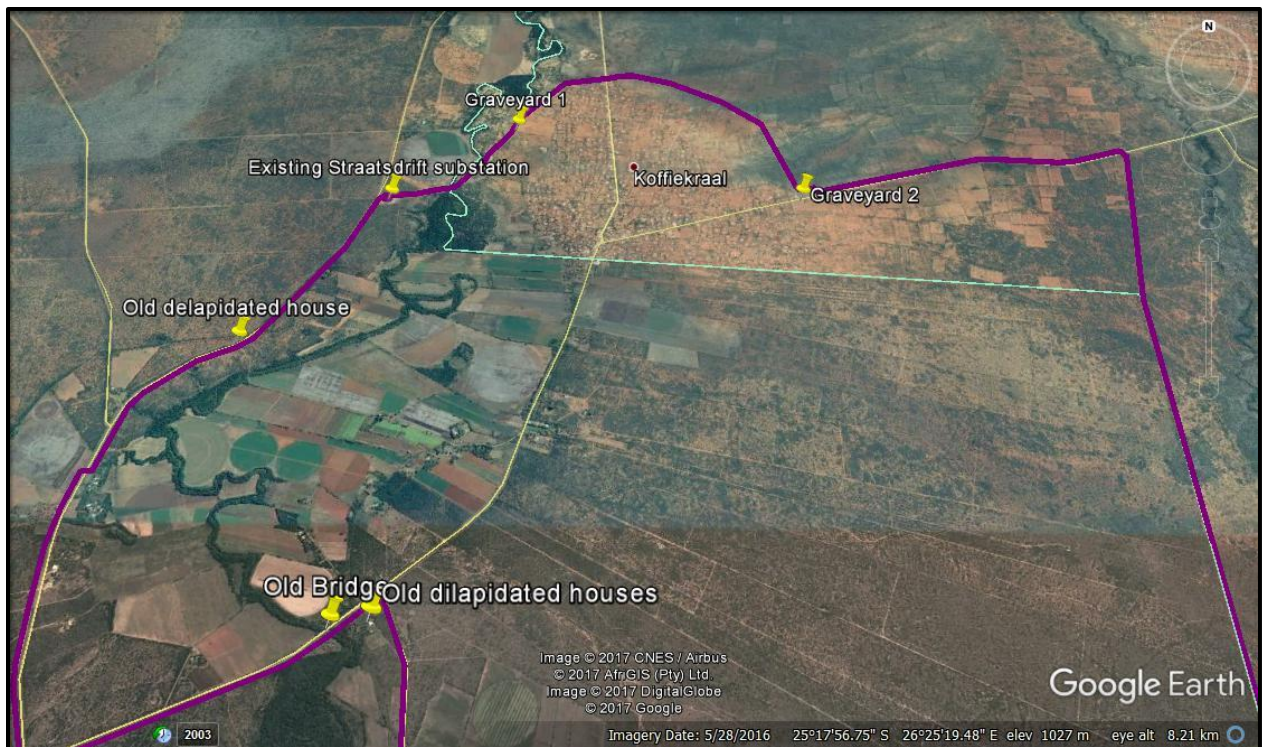


Figure 15: First half of aerial map of the findings on site.



Figure 16: Second half of aerial map of the findings on site.

6.1 Impact Assessment

The proposed construction has a potential of impacting heritage resources found on site. This section evaluates the level of significance of these heritage resources and the extent of these impacts WITH and WITHOUT mitigation measures in relation to the project under study.

Using table 1 from the methodology which is now labelled table 3, the heritage resource identified on site can be rated as follows:

Table 4: Rating of the heritage resource found on site.

Heritage Resource Identified	Field Rating & Grading	Significance	Recommended Mitigation
Structures	Generally Protected B (GP.B)	Medium	Recording before destruction
Graveyards	Local Significance (LS) Grade 3B	High	Mitigation (parts of the site to be retained)

Table 5: Evaluation of the impact of the project on the heritage resources **WITHOUT** mitigation measures.

Aspect	Description	Weight
Probability	Improbable	1
	Probable	2
	Highly Probable	4
	Definite	5
Duration	Short term	1
	Medium term	3
	Long term	4
	Permanent	5
Scale	Local	1
	Site	2
	Regional	3
Magnitude/Severity	Low	2
	Medium	6
	High	8
Significance	Sum (Duration, Scale, Magnitude) x Probability	
	Negligible	≤20
	Low	>20≤40
	Moderate	>40≤60
	High	>60

Results: $5+2+8 \times 5 = 75$ i.e >60

This means without mitigation measures; the heritage resources will be impacted and its impact may render the project unacceptable

Table 6: Evaluation of the impacts of the project on the heritage resources **WITH** mitigation measures.

Aspect	Description	Weight
Probability	Improbable	1
	Probable	2
	Highly Probable	4
	Definite	5
Duration	Short term	1
	Medium term	3
	Long term	4
	Permanent	5
Scale	Local	1
	Site	2
	Regional	3
Magnitude/Severity	Low	2
	Medium	6
	High	8
Significance	Sum (Duration, Scale, Magnitude) x Probability	
	Negligible	≤20
	Low	>20≤40
	Moderate	>40≤60
	High	>60

Results: $1+1+6 \times 1 = 8$ i.e. ≤ 20

This means with mitigation measures the impact on the heritage resources is non-existent or unsubstantial and is of no or little importance to any stakeholder and can be ignored.

7. SITE SIGNIFICANCE

The level of significance of the site and the cultural resources varies between social, historical, spiritual, scientific and aesthetic value.

Social value is when a place has become a focus of spiritual, political, national, or other cultural sentiments to a majority or minority group. This may be because the site is accessible and well known, rather than particularly well preserved or scientifically important (SAHRA Regulations). The study area has no social value, given that one does not consider heritage resources located outside the proposed line; like the cemetery.

Historical value refers to areas where historical events took place, and such events have high significance either locally, regionally, provincially or nationally. The proposed area is historically significant given that the settlement houses that are found on the Alternative Corridor 2 route happen to be one of the earliest in the area.

Scientific value refers to the importance of the study area for research purposes. The study area seemed to have no scientific value.

Aesthetic value refers to the unique beauty of the site. The study area has no aesthetic value.

Based on the above conclusions, the surrounding area of the proposed site has heritage significance or value, therefore no heritage resources should be impacted by the proposed project without consent from the relevant authority.

8. RECOMMENDATIONS

- During the construction phase, the contractor should keep within the perimeters of the proposed route to avoid impacting the heritage resources found in close proximity;
- Fences for the cemeteries can be used as a barricade. This means no construction should take place inside the fence to protect the graves;
- The contractor should induct all employees on the importance of heritage sites and resources that they should not be impacted in any way. This also includes any heritage resources that may be found during the construction phase that were not identified during the physical survey;

- Should any heritage resources be found on site during the excavation; be it archaeological artefacts such as stone tools and pottery; graves and structures; the contractor should cease construction immediately and contact the client. A heritage expert should be called to site to assess the significance of those heritage resources and the impacts of the proposed activities on the later, and then provide mitigation measures.
- The possibility of uncovering unearthed burial grounds and graves during excavation are high, given that the disturbance of the proposed route is restricted to the existing powerline and majority of the area remains undisturbed. Should potential human remains be found on site, the contractor should cease construction immediately and the South African Police Service and the client should also be contacted. Should the remains be below 60 years old since time of death, it is considered a forensic case and further investigations will be conducted by the police. Should the remains be above 60 years old since time of death, it becomes a South African Heritage Resources Agency case. This means an archaeologist should be called on site to remove the remains at the expense of the client.
- It is recommended that the Alternative Corridor 1 route be selected as the Alternative Corridor 2 has heritage resources within the proposed line. Should the client decide to opt for Alternative Corridor 2, a phase 2 heritage impact assessment should be conducted to thoroughly document the demolished settlement houses on the route that date to over 100 years, prior to removing them.

9. CONCLUSION

During the physical survey conducted on the 16 & 17 June 2017, heritage resources were found within and outside the proposed routes. It was assumed that the proposed routes may be rich in heritage resources seeing that the area is less disturbed from Google Earth Maps. However, the area turned to be more disturbed than previously anticipated and less evidence of old settlements were observed. Given this, the proposed routes are not highly sensitive from a heritage perspective.

It is concluded based on the findings of the survey that the construction may proceed preferably on the proposed Alternative Corridor 1 route provided the proposed mitigation measures are adhered to. The final report will be submitted to NWPHRA for review and decision making. Based on the findings we recommend that NWPHRA grant Eskom the approval to proceed with the

construction of an 88kv distribution powerline from the existing Straatsdrift substation to the proposed Silwerkraans substation in terms of the Heritage Resources Act (Act No.25 of 1999). (Act No.25 of 1999).

10. REFERENCES

Badat, S. 2012. *Forgotten People - Political Banishment under Apartheid*: Banishment and rural resistance in the late 1950s: Bahurutshe and Sekhukhuneland. Jocana Media.

Huffman, T. N 2007. *Handbook to the Iron Age*. The archaeology of Pre-Colonial farming societies in southern Africa. University of KwaZulu Natal Press. South Africa.

Legassick, M. 1969b. The Sotho-Tswana peoples before 1800. In L. Thompson (ed.), *African societies in the southern Africa*. London: Heinemann, pp. 86-125.

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

Pelser, A. 2009. Travelling through Time: Archaeology and the Vredefort Dome. In: Reimold, U. & Gibson, R. (eds) *Meteorite Impact! The Danger from Space and South Africa's Mega-Impact, the Vredefort Structure (Third Edition)*: 164-178. Johannesburg: Springer.

INTERNET CITATIONS

<http://www.sahistory.org.za>, Retrieved 20 June 2017

APPENDIX A – LIST OF LEGISLATION APPLICABLE TO THE SITE

11. LEGISLATION

National Heritage Resources Act 25 of 1999

11.1 Section 3 of the NHRA 25 of 1999

According to Section 3 under National Estate of the National Heritage Act 25 of 1999 the heritage resources in South Africa includes the following:

“(1) For the purposes of this Act, those heritage resources of South Africa which are of cultural significance or other special value for the present community and for future generations must be considered part of the national estate and fall within the sphere of operations of heritage resources authorities.

(2) Without limiting the generality of subsection (1), the national estate may include –

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

- (i) objects recovered from the soil or waters of South Africa, including archaeological and palaeontological objects and material, meteorites and rare geological specimens;
- (ii) objects to which oral traditions are attached or which are associated with living heritage;
- (iii) ethnographic art and objects;
- (iv) military objects;
- (v) objects of decorative or fine art;
- (vi) objects of scientific or technological interest; and
- (vii) books, records, documents, photographic positives and negatives, graphic, film or video material or sound recordings, excluding those that are public records as defined in section 1(xiv) of the National Archives of South Africa Act, 1996 (Act No. 43 of 1996).

(3) Without limiting the generality of subsections (1) and (2), a place or object is to be considered part of the national estate if it has cultural significance or other special value because of –

- (a) its importance in the community, or pattern of South Africa's history;
- (b) its possession of uncommon, rare or endangered aspects of South Africa's natural or cultural heritage;
- (c) its potential to yield information that will contribute to an understanding of South Africa's natural or cultural heritage;
- (d) its importance in demonstrating the principal characteristics of a particular class of South Africa's natural or cultural places or objects;
- (e) its importance in exhibiting particular aesthetic characteristics valued by a community or cultural group;
- (f) its importance in demonstrating a high degree of creative or technical achievement at a particular period;
- (g) its strong or special association with a particular community or cultural group for social, cultural or spiritual reasons;
- (h) its strong or special association with the life or work of a person, group or organisation of importance in the history of South Africa; and
- (i) sites of significance relating to the history of slavery in South Africa".

11.2 Section 38 of NHRA 25 of 1999

According to Section 38 under Heritage resources management of the National Heritage Act 25 of 1999 the heritage resources in South Africa should be managed in the following:

“(1) Subject to the provisions of subsections (7), (8) and (9), any person who intends to undertake a development categorised as—

(a) the construction of a road, wall, powerline, pipeline, canal or other similar form of linear development or barrier exceeding 300m in length;

(b) the construction of a bridge or similar structure exceeding 50 m in length;

(c) any development or other activity which will change the character of a site—

(i) exceeding 5 000 m² in extent; or

(ii) involving three or more existing erven or subdivisions thereof; or

(iii) involving three or more erven or divisions thereof which have been consolidated within the past five years; or

(iv) the costs of which will exceed a sum set in terms of regulations by SAHRA or a provincial heritage resources authority;

(d) the re-zoning of a site exceeding 10 000 m² in extent; or

(e) any other category of development provided for in regulations by SAHRA or a provincial heritage resources authority, must at the very earliest stages of initiating such a development, notify the responsible heritage resources authority and furnish it with details regarding the location, nature and extent of the proposed development.

(2) The responsible heritage resources authority must, within 14 days of receipt of a notification in terms of subsection (1)—

(a) if there is reason to believe that heritage resources will be affected by such development, notify the person who intends to undertake the development to submit an impact assessment report. Such report must be compiled at the cost of the person proposing the development, by a person or persons approved by the responsible heritage resources authority with relevant qualifications and experience and professional standing in heritage resources management; or

(b) notify the person concerned that this section does not apply.

(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.

(4) The report must be considered timeously by the responsible heritage resources authority which must, after consultation with the person proposing the development, decide—

(a) whether or not the development may proceed;

(b) any limitations or conditions to be applied to the development;

(c) what general protections in terms of this Act apply, and what formal protections may be applied, to such heritage resources;

(d) whether compensatory action is required in respect of any heritage resources damaged or destroyed as a result of the development; and

(e) whether the appointment of specialists is required as a condition of approval of the proposal.

(5) A provincial heritage resources authority shall not make any decision under subsection (4) with respect to any development which impacts on a heritage resource protected at national level unless it has consulted SAHRA.

(6) The applicant may appeal against the decision of the provincial heritage resources authority to the MEC, who—

(a) must consider the views of both parties; and

(b) may at his or her discretion—

(i) appoint a committee to undertake an independent review of the impact assessment report and the decision of the responsible heritage authority; and

(ii) consult SAHRA; and

(c) must uphold, amend or overturn such decision.

(7) The provisions of this section do not apply to a development described in subsection (1) affecting any heritage resource formally protected by SAHRA unless the authority concerned decides otherwise.

(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 No. 73 of 1989), or the integrated environmental management guidelines issued by the Department of Environment Affairs and Tourism, or the Minerals Act, 1991 (Act No. 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.

(9) The provincial heritage resources authority, with the approval of the MEC, may, by notice in the Provincial Gazette, exempt from the requirements of this section any place specified in the notice.

(10) Any person who has complied with the decision of a provincial heritage resources authority in subsection (4) or of the MEC in terms of subsection (6) or other requirements referred to in subsection (8), must be exempted from compliance with all other protections in terms of this Part, but any existing heritage agreements made in terms of section 42 must continue to apply.

12. IMAGES OF THE PROPOSED ALTERNATIVE CORRIDOR 1 AND ALTERNATIVE CORRIDOR 2 LINE

12.1. Images of the Alternative Corridor 1 line from starting point in Silwerkraans







12.2. Images of the alternative Corridor 2 line from starting point in Pella



