

ARCHAEOLOGICAL IMPACT ASSESSMENT

FOR THE PROPOSED JAN SMUTS CARRIAGE WAY UPGRADE

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General

The possibility of unmarked or informal graves and subsurface finds cannot be excluded. If any possible finds are made during construction, the operations must be stopped and a qualified archaeologist contacted for an assessment of the find/s.

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EXECUTIVE SUMMARY

Site name and location: The Jan Smuts Upgrade entails the proposed upgrade of Jan Smuts Road to dual carriage way from Northworth Drive to Erlswold Way and from 8th Avenue to Kent Road, Rosebank, Johannesburg by the Johannesburg Roads Agency (JRA).

1: 50 000 Topographic Map: 2628 AA

Consultant: Envirolution Consulting

Developer: Johannesburg Roads Agency

Heritage Consultant: Heritage Contracts and Archaeological Consulting CC (HCAC).

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Date of Report: 13 March 2017.

Findings of the Assessment:

HCAC was appointed to assess the study area in terms of the archaeological component of Section 35 of the NHRA. The study area has been extensively altered over the years consisting of paved sidewalks and an existing tarred road dating from the 1930's. During the survey no surface evidence of any archaeological sites or remains were recorded. It should be noted that subsurface finds cannot be excluded as evident from archaeological mitigation at a historical midden (JZCP_Site 1) that was exposed during construction work at the car park of the Johannesburg Zoo, to the south of the study area (Birkholtz & Behrens 2015). Therefore it is recommended that a chance find procedure is implemented for the project.

In terms of the built environment of the area (Section 34), the road was already in existence by the early 1930s and many of the structures bordering the road already existed by 1939. These structures are protected by legislation. Based on the current project proposal no structures are expected to be directly impacted on by the proposed road upgrade.

In terms of Section 36 of the Act no burial sites were recorded in the study area. However, if any graves are located in future they should ideally be preserved *in-situ* or alternatively relocated according to existing legislation.

The study area is surrounded by commercial and residential developments. The tree lined sections of Jan Smuts road were identified as part of the cultural landscape (Street scape and view scape) and will be negatively impacted on by the proposed road upgrade. This tree lane is not listed under the 2016 list of Champion Trees of South Africa nor currently protected under the Individual Trees and Groups of Trees Declared as Protected under Section 12 of the National Forests Act of 1998 by the Department of Agriculture, Forestry and Fisheries. Pending comment from SAHRA this aspect will require further investigation by a conservation architect as a second phase of study

There is from an archaeological point of view no reason why the development cannot commence based on approval from SAHRA.

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ABBREVIATIONS

AIA: Archaeological Impact Assessment
ASAPA: Association of South African Professional Archaeologists
BIA: Basic Impact Assessment
CRM: Cultural Resource Management
ECO: Environmental Control Officer
EIA: Environmental Impact Assessment*
EIA: Early Iron Age*
EIA Practitioner: Environmental Impact Assessment Practitioner
EMP: Environmental Management Plan
ESA: Early Stone Age
GPS: Global Positioning System
HIA: Heritage Impact Assessment
LIA: Late Iron Age
LSA: Late Stone Age
MEC: Member of the Executive Council
MIA: Middle Iron Age
MPRDA: Mineral and Petroleum Resources Development Act
MSA: Middle Stone Age
NEMA: National Environmental Management Act
PRHA: Provincial Heritage Resource Agency
SADC: Southern African Development Community
SAHRA: South African Heritage Resources Agency

**Although EIA refers to both Environmental Impact Assessment and the Early Iron Age both are internationally accepted abbreviations and must be read and interpreted in the context it is used.*

GLOSSARY

Archaeological site (remains of human activity over 100 years old)

Early Stone Age (~ 2.6 million to 250 000 years ago)

Middle Stone Age (~ 250 000 to 40-25 000 years ago)

Later Stone Age (~ 40-25 000, to recently, 100 years ago)

The Iron Age (~ AD 400 to 1840)

Historic (~ AD 1840 to 1950)

Historic building (over 60 years old)

1 BACKGROUND INFORMATION

Heritage Contracts and Archaeological Consulting CC (**HCAC**) was appointed to conduct an Archaeological Impact Assessment for the proposed Jan Smuts Upgrade project.

The aim of the study is to identify cultural heritage sites, document, and assess their importance within local, provincial and national context. It serves to assess the impact of the proposed project on non-renewable heritage resources, and to submit appropriate recommendations with regard to the responsible cultural resources management measures that might be required to assist the developer in managing the discovered heritage resources in a responsible manner. It is also conducted to protect, preserve, and develop such resources within the framework provided by the National Heritage Resources Act of 1999 (Act 25 of 1999).

The report outlines the approach and methodology utilized before and during the survey, which includes: Phase 1, a desktop study that includes collection from various sources and consultations; Phase 2, the physical surveying of the study area on foot and by vehicle; Phase 3, reporting the outcome of the study.

General site conditions were recorded by means of photographs, GPS locations, and site descriptions. Possible impacts were identified and mitigation measures are proposed in the following report.

This report must also be submitted to the SAHRA for review.

1.1. Terms of Reference

Desktop study

Conduct a brief desktop study where information on the area is collected to provide a background setting of the archaeology that can be expected in the area.

Field study

Conduct a field study to: a) systematically survey the proposed project area to locate, identify, record, photograph and describe sites of archaeological, historical or cultural interest; b) record GPS points identified as significant areas; c) determine the levels of significance of the various types of heritage resources recorded in the project area.

Reporting

Report on the identification of anticipated and cumulative impacts the operational units of the proposed project activity may have on the identified heritage resources for all 3 phases of the project; i.e., construction, operation and decommissioning phases. Consider alternatives, should any significant sites be impacted adversely by the proposed project. Ensure that all studies and results comply with Heritage legislation and the code of ethics and guidelines of ASAPA.

To assist the developer in managing the discovered heritage resources in a responsible manner, and to protect, preserve, and develop them within the framework provided by the National Heritage Resources Act of 1999 (Act 25 of 1999).

1.2. Archaeological Legislation and Best Practice

Phase 1, an AIA or a HIA is a pre-requisite for development in South Africa as prescribed by SAHRA and stipulated by legislation. The overall purpose of a heritage specialist input is to:

- » Identify any heritage resources, which may be affected;
- » Assess the nature and degree of significance of such resources;
- » Establish heritage informants/constraints to guide the development process through establishing thresholds of impact significance;
- » Assess the negative and positive impact of the development on these resources;
- » Make recommendations for the appropriate heritage management of these impacts.

The AIA or HIA, as a specialist sub-section of the EIA, is required under the National Heritage Resources Act NHRA of 1999 (Act 25 of 1999), Section 23(2) (b) of the NEMA and section S. 39 (3) (b) (iii) of the MPRDA.

The AIA should be submitted, as part of the EIA, BIA or EMP, to the PHRA if established in the province or to SAHRA. SAHRA will be ultimately responsible for the professional evaluation of Phase 1 AIA reports upon which review comments will be issued. 'Best practice' requires Phase 1 AIA reports and additional development information, as per the EIA, BIA/EMP, to be submitted in duplicate to SAHRA after completion of the study. SAHRA accepts Phase 1 AIA reports authored by professional archaeologists, accredited with ASAPA or with a proven ability to do archaeological work.

Minimum accreditation requirements include an Honours degree in archaeology or related discipline and 3 years' post-university CRM experience (field supervisor level).

Minimum standards for reports, site documentation and descriptions are set by ASAPA in collaboration with SAHRA. ASAPA is based in South Africa, representing professional archaeology in the SADC region. ASAPA is primarily involved in the overseeing of ethical practice and standards regarding the archaeological profession. Membership is based on proposal and secondment by other professional members.

Phase 1 AIA's are primarily concerned with the location and identification of sites situated within a proposed development area. Identified sites should be assessed according to their significance. Relevant conservation or Phase 2 mitigation recommendations should be made. Recommendations are subject to evaluation by SAHRA.

Conservation or Phase 2 mitigation recommendations, as approved by SAHRA, are to be used as guidelines in the developer's decision making process.

Phase 2 archaeological projects are primarily based on salvage/mitigation excavations preceding development destruction or impact on a site. Phase 2 excavations can only be conducted with a permit, issued by SAHRA to the appointed archaeologist. Permit conditions are prescribed by SAHRA and includes (as minimum requirements) reporting back strategies to SAHRA and deposition of excavated material at an accredited repository.

In the event of a site conservation option being preferred by the developer, a site management plan, prepared by a professional archaeologist and approved by SAHRA, will suffice as minimum requirement.

After mitigation of a site, a destruction permit must be applied for from SAHRA by the client before development may proceed.

Human remains older than 60 years are protected by the National Heritage Resources Act, with reference to Section 36. Graves older than 60 years, but younger than 100 years fall under Section 36 of Act 25 of 1999 (National Heritage Resources Act), as well as the Human Tissues Act (Act 65 of 1983), and are the jurisdiction of SAHRA. The procedure for Consultation Regarding Burial Grounds and Graves (Section 36[5]) of Act 25 of 1999) is applicable to graves older than 60 years that are situated outside a formal cemetery administrated by a local authority. Graves in this age category, located inside a formal cemetery administrated by a local authority, require the same authorisation as set out for graves younger than 60 years, in addition to SAHRA authorisation. If the grave is not situated inside a formal cemetery, but is to be relocated to one, permission from the local authority is required and all regulations, laws and by-laws, set by the cemetery authority, must be adhered to.

Human remains that are less than 60 years old are protected under Section 2(1) of the Removal of Graves and Dead Bodies Ordinance (Ordinance no. 7 of 1925), as well as the Human Tissues Act (Act 65 of 1983), and are the jurisdiction of the National Department of Health and the relevant Provincial Department of Health and must be submitted for final approval to the office of the relevant Provincial Premier. This function is usually delegated to the Provincial MEC for Local Government and Planning; or in some cases, the MEC for Housing and Welfare. Authorisation for exhumation and reinternment must also be obtained from the relevant local or regional council where the grave is situated, as well as the relevant local or regional council to where the grave is being relocated. All local and regional provisions, laws and by-laws must also be adhered to. To handle and transport human remains, the institution conducting the relocation should be authorised under Section 24 of Act 65 of 1983 (Human Tissues Act).

1.3. Description of Study Area

1.3.1 Location Data

The proposed project extends from Northworth Drive to Erlswold Way and from 8th Avenue to Kent Road, Rosebank (26° 9'28.86" South and 28° 2'3.11" East and from 26° 8'29.27"S and 28° 2'8.02"E). The study area falls under the jurisdiction of City of Johannesburg in Rosebank, Gauteng.

1.3.2. Location Map

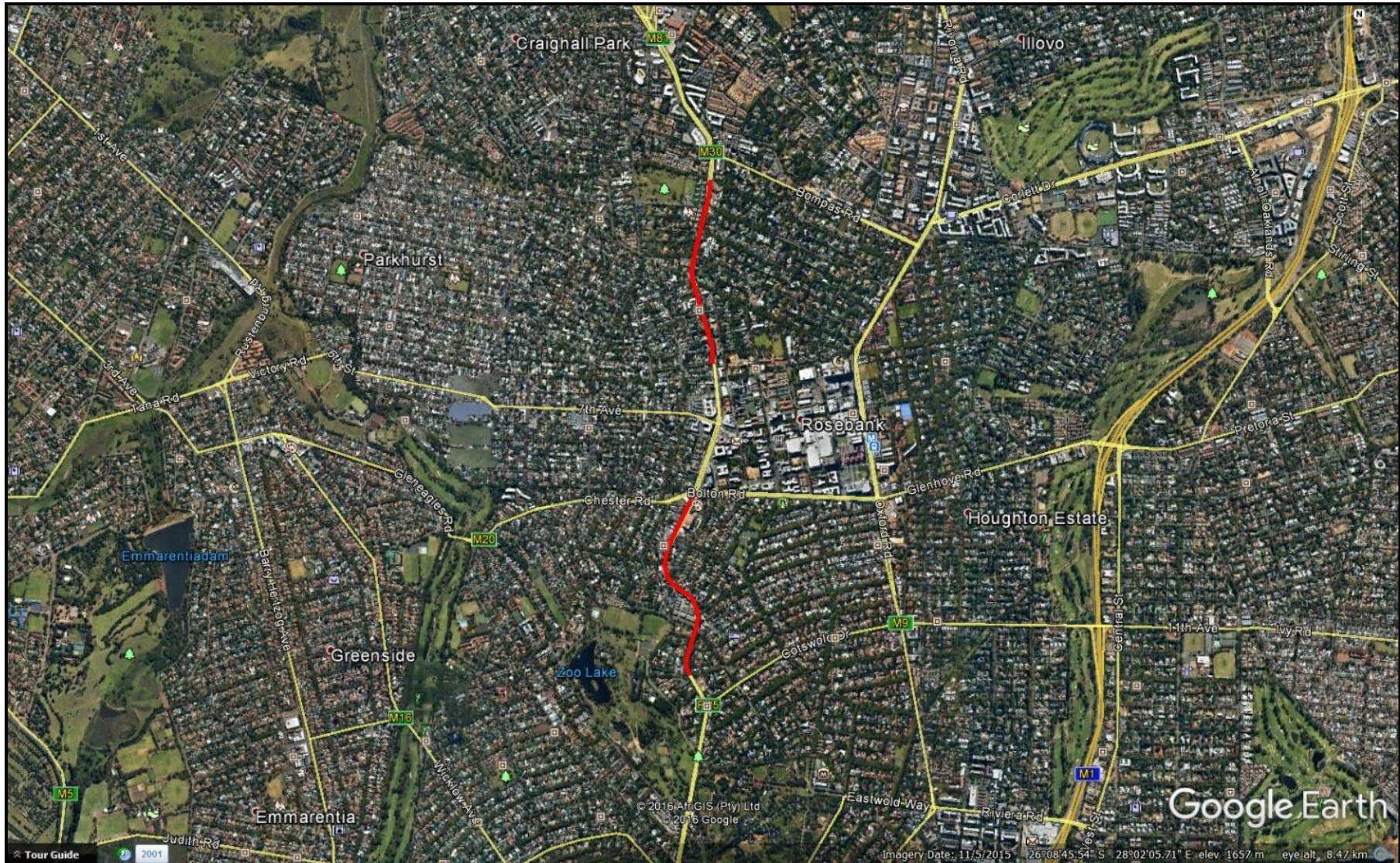


Figure 1. Location map , the study area is indicated in red (Google Eart 2015).

2. APPROACH AND METHODOLOGY

The aim of the study is to cover archaeological databases to compile a background of the archaeology that can be expected in the study area followed by field verification; this was accomplished by means of the following phases.

2.1 Phase 1 - Desktop Study

The first phase comprised desktop, scanning existing records for archaeological sites, historical sites, graves, architecture (structures older than 60 years) of the area. The following approach was followed:

2.1.1 Literature Search

This was conducted by utilising data stored in the national archives and published reports relevant to the area. The aim of this is to extract data and information on the area in question.

2.1.2 Information Collection

SAHRIS was consulted to collect data from previously conducted CRM projects in the region to provide a comprehensive account of the history of the study area.

2.1.3 Consultation

No public consultation was done by the author as part of the AIA process.

2.1.4 Google Earth and Mapping Survey

Google Earth and 1:50 000 maps of the area were utilised to identify possible places where sites of heritage significance might be located.

2.1.5 Genealogical Society of South Africa

The database of the Genealogical Society was consulted to collect data on any known graves in the area.

2.2 Phase 2 - Physical Surveying

Due to the nature of cultural remains, the majority of which occurs below surface, a field survey of the proposed development was conducted. The study area was surveyed by means of vehicle and pedestrian surveys in February 2017. The survey was aimed at covering the proposed development footprint. Track logs of the areas covered were taken (Figure 2).

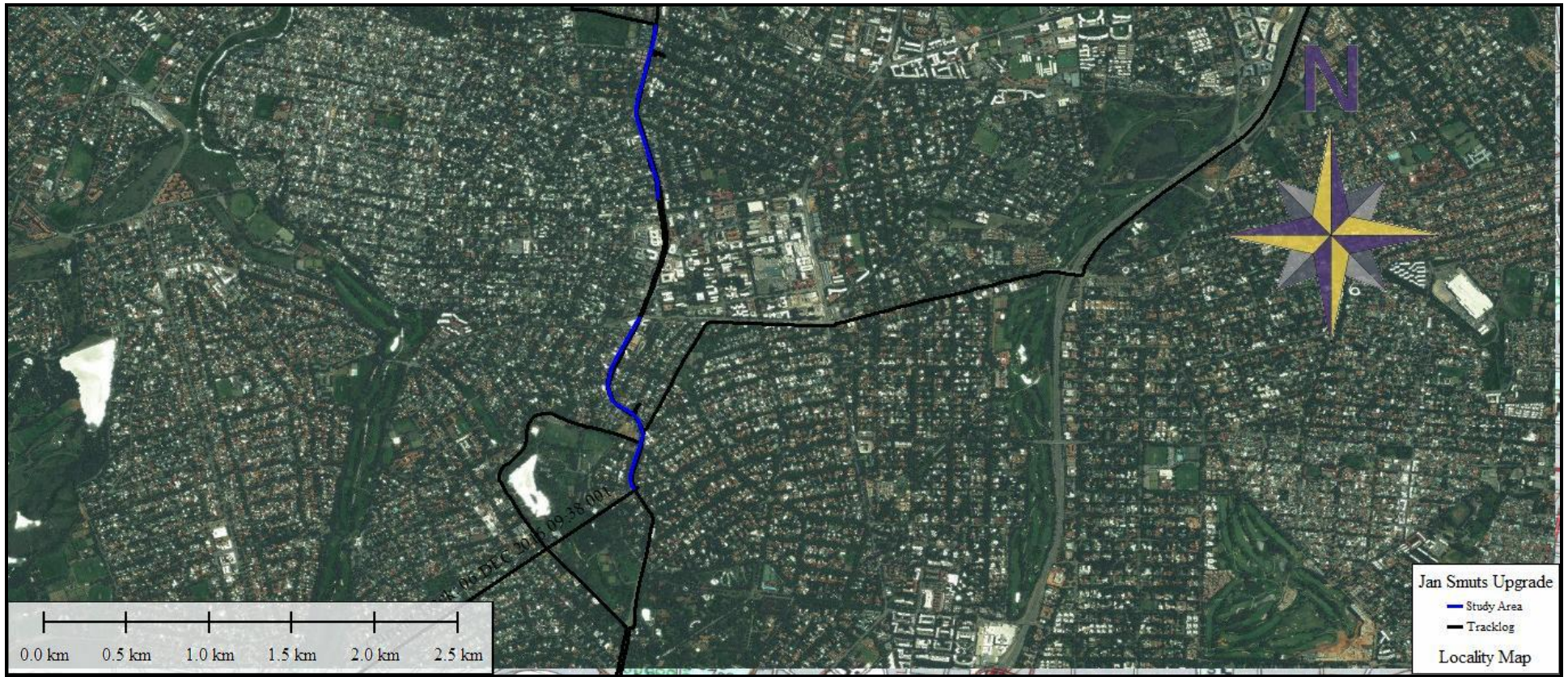


Figure 2. Track logs of the areas surveyed indicated in black with the development footprint indicated in blue.

2.3. Restrictions

The authors acknowledge that the brief literature review is not exhaustive on the literature of the area. Due to the subsurface nature of archaeological artefacts, the possibility exists that some features or artefacts may not have been discovered/recorded during the survey and the possible occurrence of unmarked graves and other cultural material cannot be excluded. Similarly, the depth of the deposit of heritage sites cannot be accurately determined due its subsurface nature. This report only deals with the footprint area of the proposed development and consisted of non-intrusive surface surveys. No public consultation was conducted for the AIA. It is possible that new information could come to light, which might change the results of this Impact Assessment.

3. NATURE OF THE DEVELOPMENT

Construction activities would include removal of topsoil as well as trenching and excavations for the foundations and associated infrastructure for the proposed building. The existing alignment will be maintained and no realignments are envisaged. The project involves implementation of dual-carriageway on the existing road, rehabilitation of the existing pavement, surfacing, reworking of gravel shoulders where applicable, surfacing the reworked shoulders and re-seals. Surfacing of the shoulders will address safety hazards associated with un-surfaced shoulders and edge breaks.

4. HISTORICAL AND ARCHAEOLOGICAL BACKGROUND OF THE STUDY AREA

4.1 Databases Consulted

Very few heritage studies were conducted in the immediate vicinity of the study area. The following studies were consulted for this report.

Author	Year	Project	Findings
Van Schalkwyk, J.	2016	Heritage Impact Assessment For The Proposed Installation Of Empire-Perth Corridor Conduits And Outfalls Storm Water Management Systems, City Of Johannesburg District Municipality, Gauteng Province	Large number of historical sites including cemeteries.
Behrens, J. & Birkholtz P	2015	Archaeological Mitigation Undertaken At A Midden (Jzcp_Site 1) Exposed During Construction Work At The Car Park Of The Johannesburg Zoo, City Of Johannesburg Metropolitan Municipality, Gauteng Province	Historical Midden

Genealogical Society and Google Earth Monuments

No cemeteries are indicated for the area under investigation.

4.2. Brief background to the study area

The history of the surrounding area will be briefly discussed. Sources for the history of the area surrounding the study area include secondary source material, maps, electronic sources, and archival documents. A brief history of human settlement from the source of J. S. Bergh (1999) will be used to write a short history of the area.

4.2.2. Historical background of the area

Excavations by Mason (1997) at the Boulders shopping centre (approximately 6 km to the south east of the current study area) was aimed at interpreting the cultural layering of the Midrand area and provides a good platform for understanding the cultural use of the wider landscape. He identified 7 occupational layers in his excavations that can be broadly divided into Stone Age, Iron Age and historical occupations.

The Stone Age can be divided in three main phases as follows;

- Later Stone Age; associated with Khoi and San societies and their immediate predecessors. Recently to ~30 thousand years ago
- Middle Stone Age; associated with Homo sapiens and archaic modern humans. 30-300 thousand years ago.
- Earlier Stone Age; associated with early Homo groups such as Homo habilis and Homo erectus. 400 000-> 2 million years ago.

Remains dating to all three of these phases were identified by Mason at the Boulders shopping Centre site, MSA and LSA material was also recorded at Glenn Ferness cave. The Iron Age of the region consists of Tswana speaking people who settled in the area from the early 16th century.

J. S. Bergh's historical atlas of the four northern provinces of South Africa is a very useful source for the writing of local and regional history. The study area is located in the region of the Melville Koppies, which is a Middle Stone-Age site. (Bergh 1999: 4) This area was also important to Iron Age communities, since these people had smelted and worked iron ore at the Melville Koppies site since the year 1060, by approximation. (Bergh 1999: 7, 87)

Regarding the Iron Age, the Smelting Site at Melville Koppies requires further mention. The site was excavated by Professor Mason from the Department of Archaeology of WITS in the 1980's. Extensive Stone walled sites are also recorded further South at Klipriviers Berg Nature reserve belonging to the Late Iron Age period. A large body of research is available on this area. These sites (Taylor's Type N, Mason's Class 2 & 5) are now collectively referred to as Klipriviersberg (Huffman 2007). These settlements are complex in that aggregated settlements are common, the outer wall sometimes includes scallops to mark back courtyards, there are more small stock kraals, and straight walls separate households in the residential zone. These sites date to the 18th and 19th centuries and was built by people in the Fokeng cluster.

In this area, the Klipriviersberg walling would have ended at about AD 1823, when Mzilikazi entered the area (Rasmussen 1978). This settlement type may have lasted longer in other areas because of the positive interaction between Fokeng and Mzilikazi.

The Difaqane (Sotho), or Mfekane ("the crushing" in Nguni) was a time of bloody upheavals in Natal and on the Highveld, which occurred around the early 1820's until the late 1830's (Bergh 1999: 10). It came about in response to heightened competition for land and trade, and caused population groups like gun-carrying Griquas and Shaka's Zulus to attack other tribes. (Bergh 1999: 14; 116-119) It seems that, in 1827, Mzilikazi's Ndebele started moving through the area where Johannesburg is located today. This group went on raids to various other areas in order to expand their area of influence (Bergh 1999: 11).

During the time of the Difaqane, a northwards migration of white settlers from the Cape was also taking place. Some travellers, missionaries and adventurers had gone on expeditions to the northern areas in South Africa, some already as early as the 1720's. It was however only by the late 1820's that a mass-movement of Dutch speaking people in the Cape

Colony started advancing into the northern areas. This was due to feelings of mounting dissatisfaction caused by economical and other circumstances in the Cape. This movement later became known as the Great Trek.

This migration resulted in a massive increase in the extent of that proportion of modern South Africa dominated by people of European descent (Ross 2002: 39). By 1939 to 1940, farm boundaries were drawn up in an area that includes the present-day Johannesburg and Krugersdorp (Bergh 1999: 15).

The Anglo-Boer War (1899-1902) was one of the greatest conflicts in South Africa and also impacted on Johannesburg. Its residents fought on both sides in the war. The city became a centre of military administration with new barracks and hospitals after being occupied by the British in 1900. Johannesburg was also a site for both Boer and African concentration camps (Figure 3).

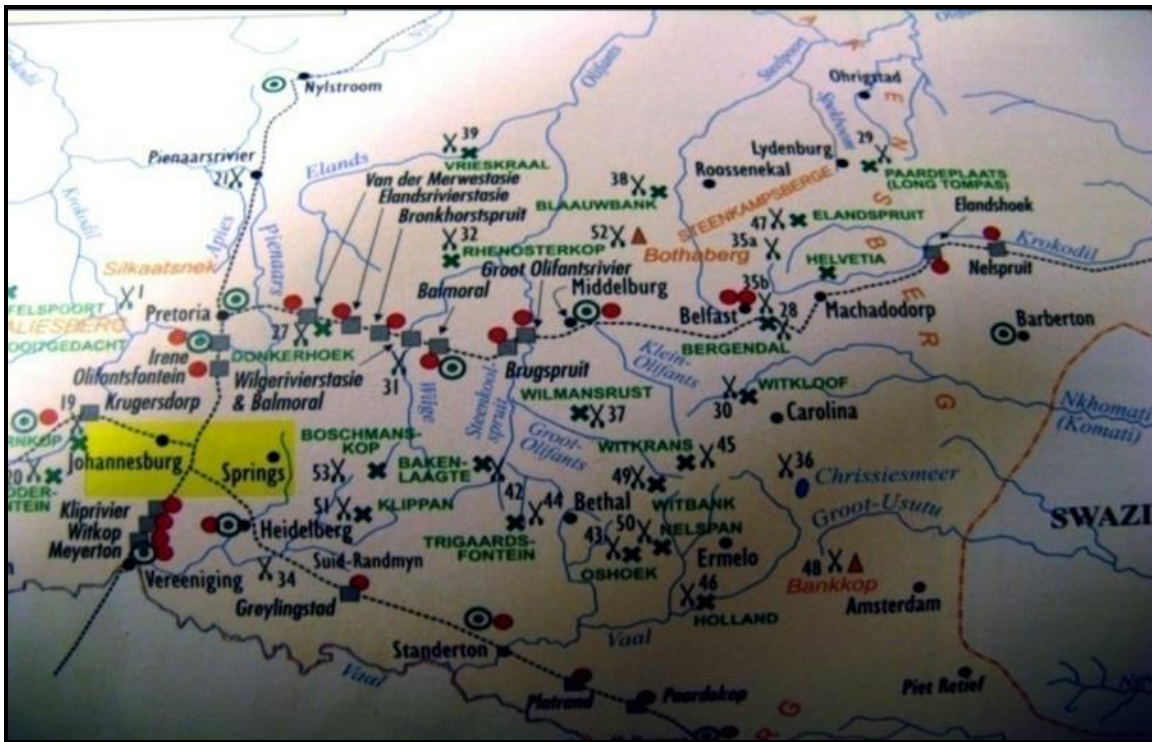


Figure 3. Concentration camps represented by red dots and railway stations with grey squares (Bergh 1999).

Since the mid-1800s up until the present, South Africa has been divided and re-divided into various districts. The district of Heidelberg was established in 1866, and the area of interest formed part thereof. This remained the case up until 1902, when the area under investigation would have formed part of the magisterial district of the West Rand within the Witwatersrand District. The Johannesburg magisterial district was proclaimed in 1909, and the sections of road under investigation remained part of this district up until the 1990s. As of 1994 the study area was located in the Johannesburg magisterial district in the new province of Gauteng. (Bergh 1999: 17, 20-27)

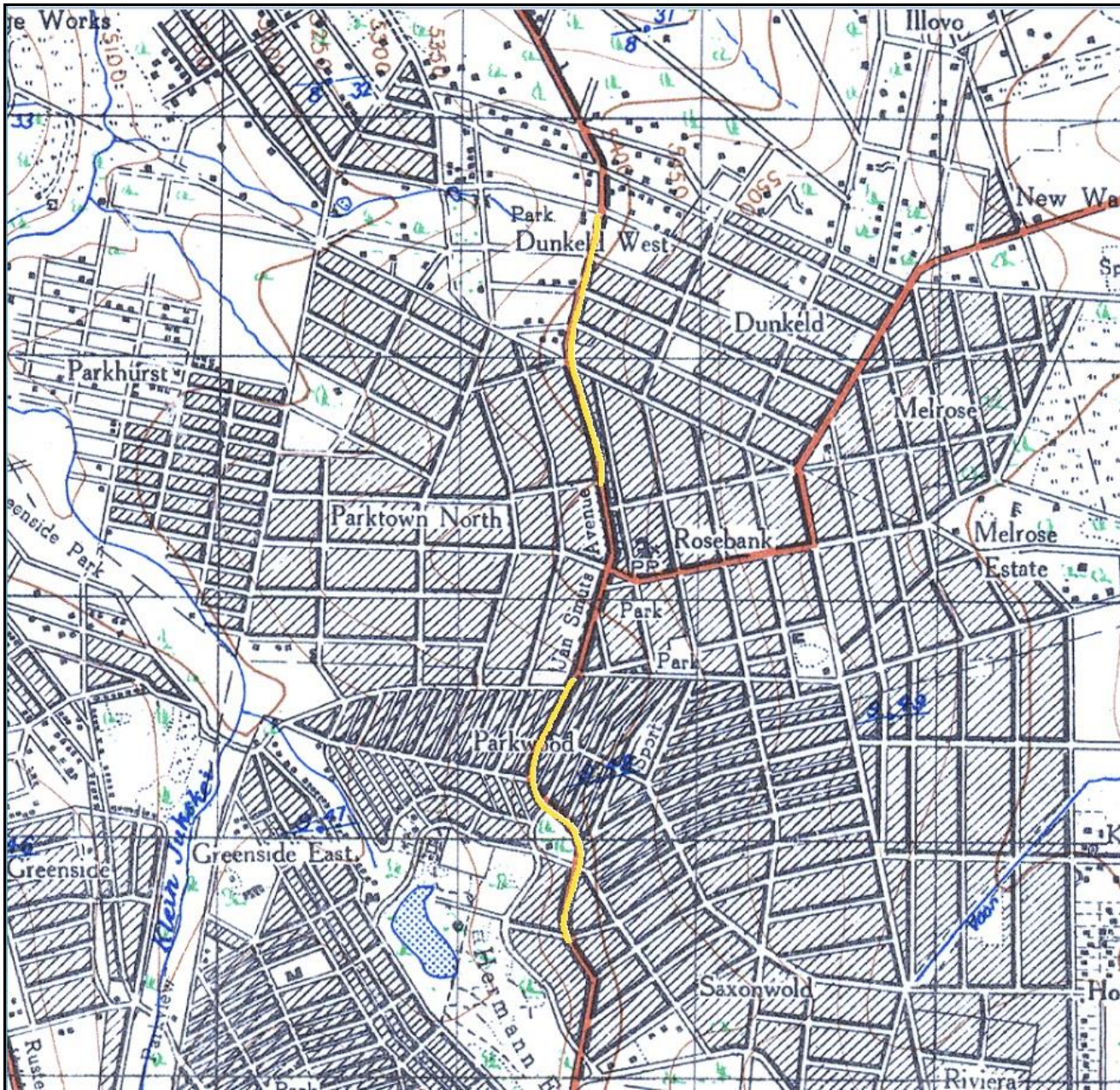


Figure 4. 1939 Topographical map of the section of Jan Smuts Avenue under investigation. One can see the residential developments of Dunkeld, Parktown North, Rosebank, Parkwood and Saxonwold bordering this main road. (Topographical map 1939)

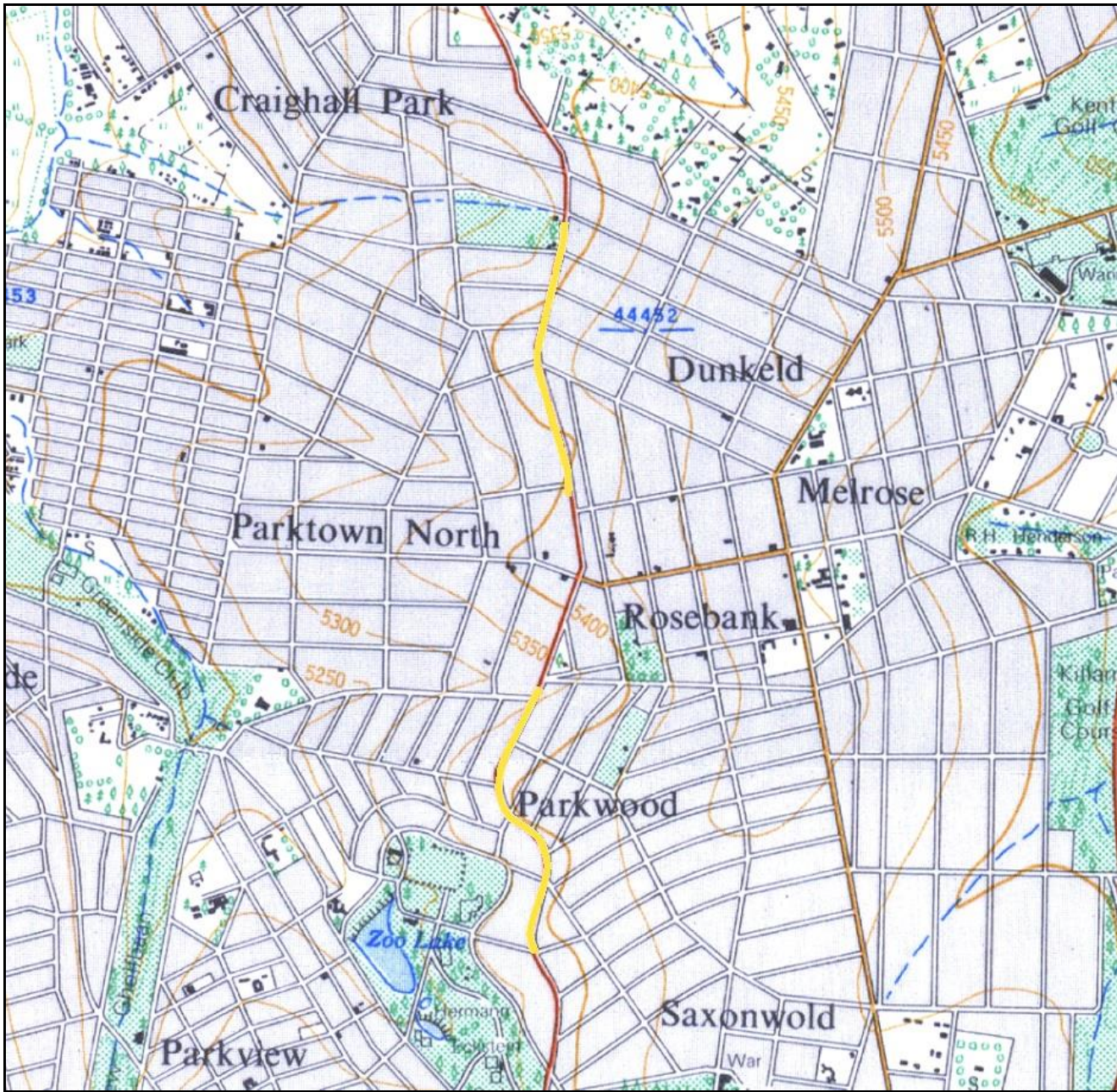


Figure 5. 1954 Topographical map of the section of Jan Smuts Avenue under investigation. One can see the residential developments of Dunkeld West, Dunkeld, Parktown North, Rosebank, Parkwood and Saxonwold bordering this main road. Zoo Lake is visible to the southwest of the southern section of road under investigation. (Topographical map 1954)

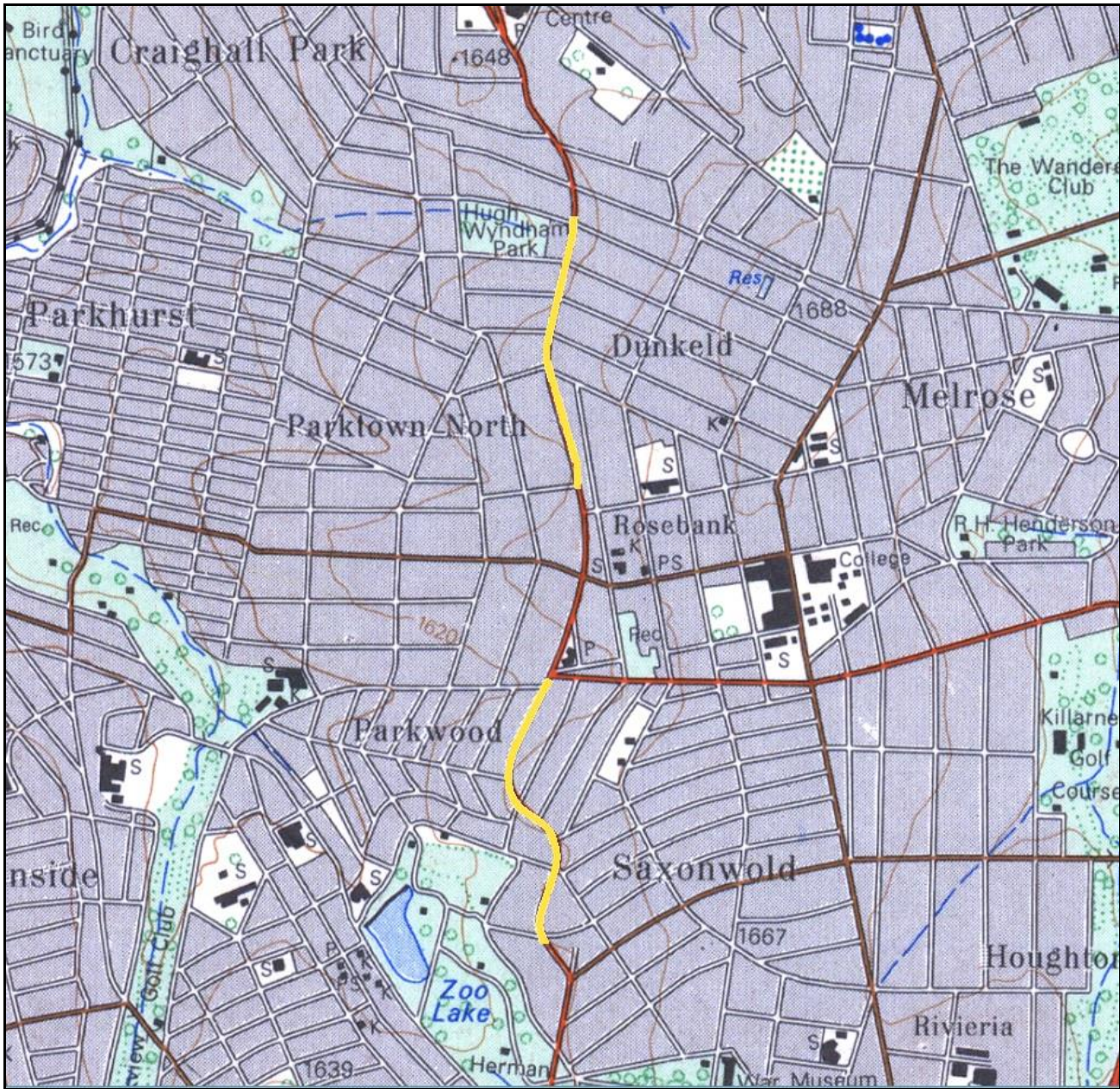


Figure 6. 1975 Topographical map of the section of Jan Smuts Avenue under investigation. One can see the residential developments of Dunkeld West, Dunkeld, Parktown North, Rosebank, Parkwood and Saxonwold bordering this main road. Zoo Lake is visible to the southwest of the southern section of road under investigation. (Topographical map 1975)

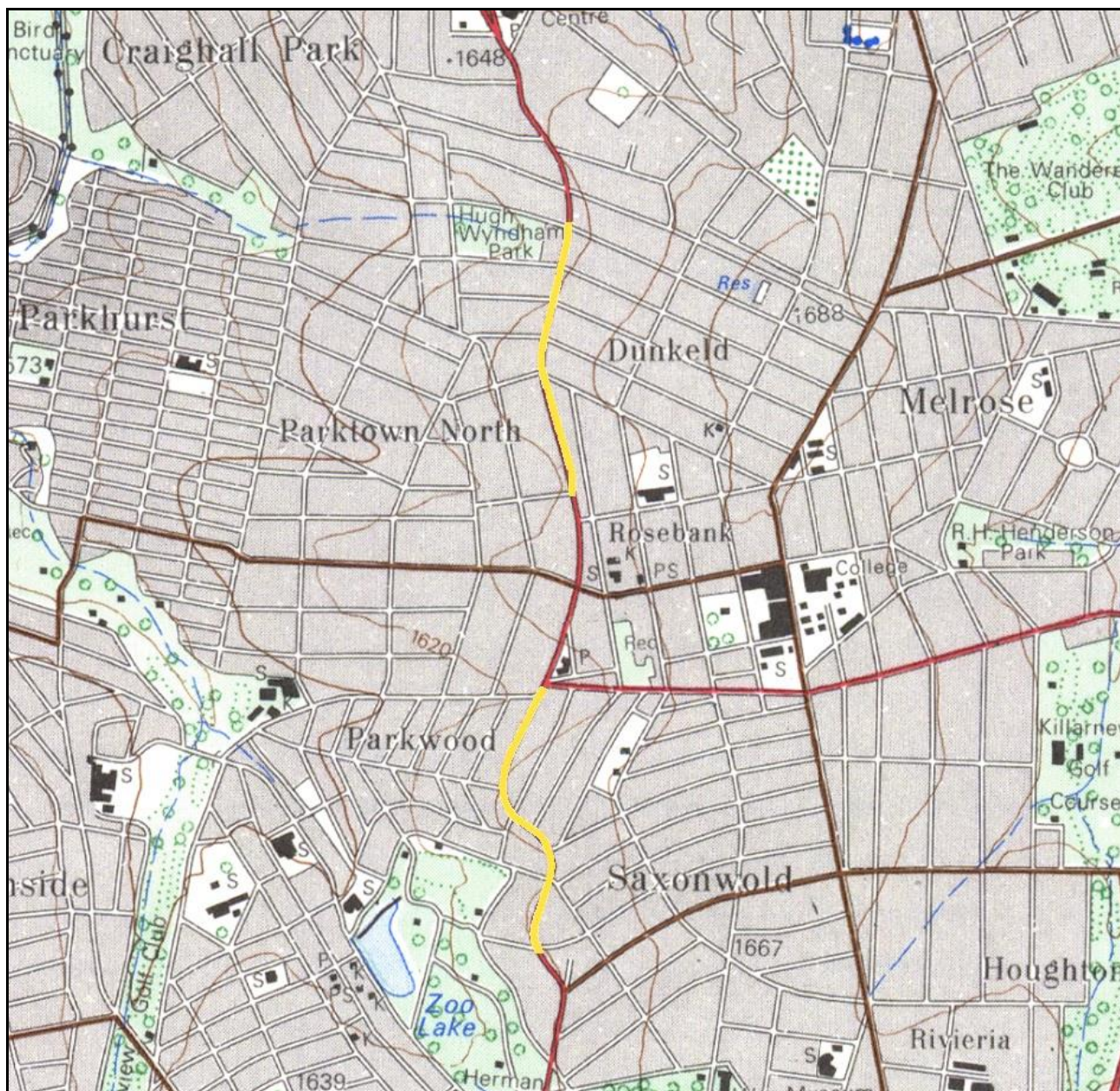


Figure 7. 1983 Topographical map of the section of Jan Smuts Avenue under investigation. One can see the residential developments of Dunkeld West, Dunkeld, Parktown North, Rosebank, Parkwood and Saxonwold bordering this main road. Zoo Lake is visible to the southwest of the southern section of road under investigation. (Topographical map 1983)

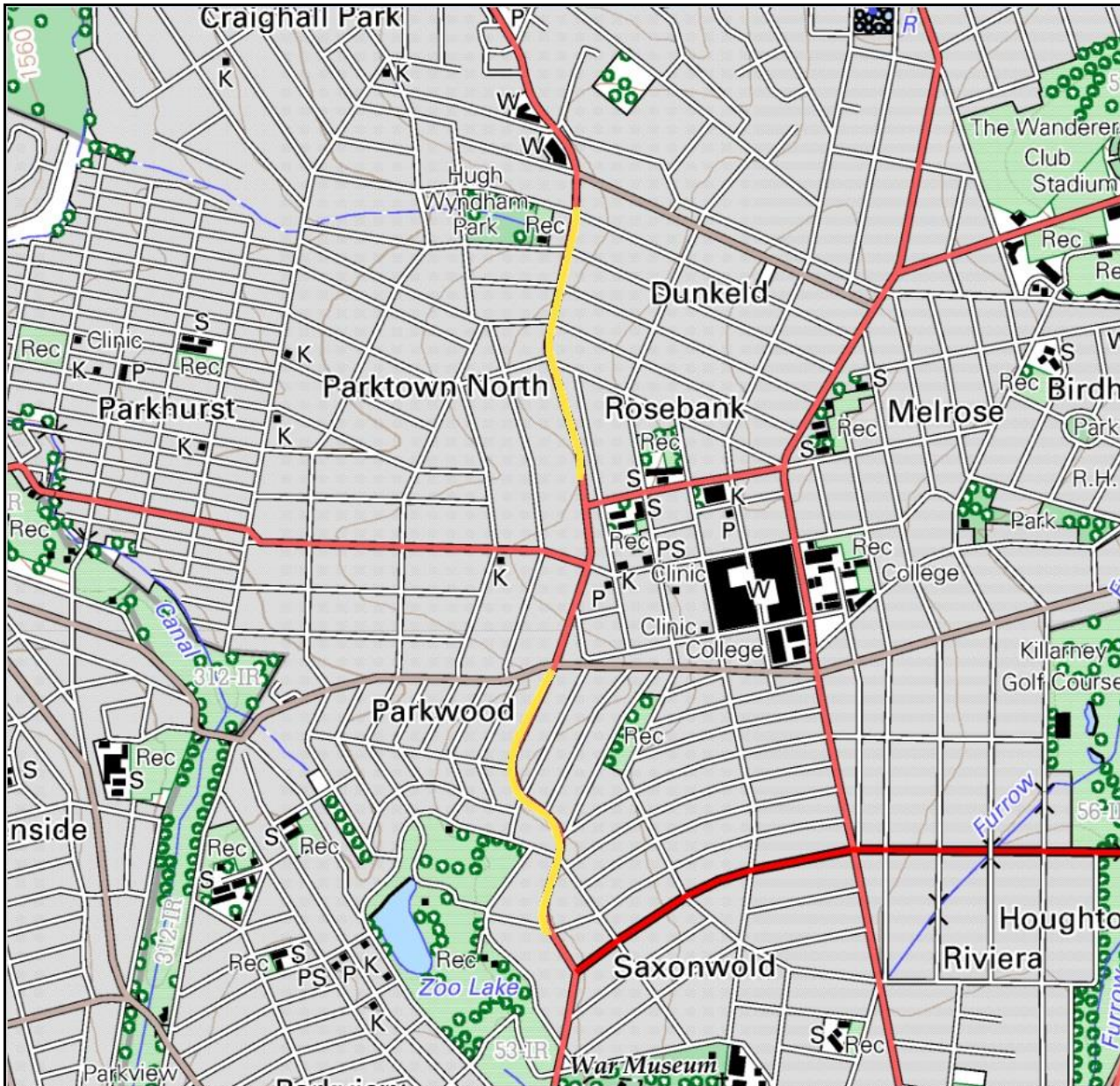


Figure 8. 2002 Topographical map of the section of Jan Smuts Avenue under investigation. One can see the residential developments of Dunkeld West, Dunkeld, Parktown North, Rosebank, Parkwood and Saxonwold bordering this main road. Zoo Lake is visible to the southwest of the southern section of road under investigation. (Topographical map 2002)

5. HERITAGE SITE SIGNIFICANCE AND MITIGATION MEASURES

The presence and distribution of heritage resources define a 'heritage landscape'. In this landscape, every site is relevant. In addition, because heritage resources are non-renewable, heritage surveys need to investigate an entire project area, or a representative sample, depending on the nature of the project. In the case of the proposed project the local extent of its impact necessitates a representative sample and only the footprint of the areas demarcated for development were surveyed. In all initial investigations, however, the specialists are responsible only for the identification of resources visible on the surface.

This section describes the evaluation criteria used for determining the significance of archaeological and heritage sites. The following criteria were used to establish site significance:

- » The unique nature of a site;
- » The integrity of the archaeological/cultural heritage deposits;
- » The wider historic, archaeological and geographic context of the site;
- » The location of the site in relation to other similar sites or features;
- » The depth of the archaeological deposit (when it can be determined/is known);
- » The preservation condition of the sites;
- » Potential to answer present research questions.

Furthermore, The National Heritage Resources Act (Act No 25 of 1999, Sec 3) distinguishes nine criteria for places and objects to qualify as 'part of the national estate' if they have cultural significance or other special value. These criteria are:

- » Its importance in/to the community, or pattern of South Africa's history;
- » Its possession of uncommon, rare or endangered aspects of South Africa's natural or cultural heritage;
- » Its potential to yield information that will contribute to an understanding of South Africa's natural or cultural heritage;
- » Its importance in demonstrating the principal characteristics of a particular class of South Africa's natural or cultural places or objects;
- » Its importance in exhibiting particular aesthetic characteristics valued by a community or cultural group;
- » Its importance in demonstrating a high degree of creative or technical achievement at a particular period;
- » Its strong or special association with a particular community or cultural group for social, cultural or spiritual reasons;
- » Its strong or special association with the life or work of a person, group or organisation of importance in the history of South Africa;
- » Sites of significance relating to the history of slavery in South Africa.

5.1. Field Rating of Sites

Site significance classification standards prescribed by SAHRA (2006), and acknowledged by ASAPA for the SADC region, were used for the purpose of this report. The recommendations for each site should be read in conjunction with section 7 of this report.

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
Generally Protected C (GP.C)	-	Low significance	Destruction

6. BASELINE STUDY-DESCRIPTION OF SITES

It is important to note that only the development footprint was surveyed. The study area comprises a tree lined road. The development of the surrounding residential and commercial structures and surrounding roads as well as internal roads on the site would have obliterated any surface indicators of archaeological resources.

This road was already in existence by the early 1930s and many of the developments bordering it already existed by 1939. No traces of any archaeological remains were identified during the survey, a search on archaeological data bases also yielded no known sites within the study area and no heritage significant sites were identified during the desktop study. The study area comprises a tree lined carriageway and the lane of trees forms part of the cultural landscape (street scape and view scape). This tree lane is not listed under the 2016 list of Champion Trees of South Africa (Annexure A) nor currently protected under the Individual Trees and Groups of Trees Declared as Protected under Section 12 of the National Forests Act of 1998 by the Department of Agriculture, Forestry and Fisheries. These trees will be negatively impacted on by the proposed project.



Figure 9: General site conditions.



Figure 10: General site conditions.



Figure 11: General site conditions



Figure 12: General site conditions .



Figure 13. General Site conditions



Figure 14. General Site conditions



Figure 15. Tree lined avenue.



Figure 16. Tree lined avenue.

7. CONCLUSIONS AND RECOMMENDATIONS

HCAC was appointed to assess the study area in terms of the archaeological component of Section 35 of the NHRA. The study area has been extensively altered over the years consisting of paved sidewalks and an existing tarred road dating from the 1930's. During the survey no surface evidence of any archaeological sites or remains were recorded. It should be noted that subsurface finds cannot be excluded as evident from archaeological mitigation at a historical midden (JZCP_Site 1) that was exposed during construction work at the car park of the Johannesburg Zoo, to the south of the study area (Birkholtz & Behrens 2015). Therefore it is recommended that a chance find procedure is implemented for the project as detailed below.

Chance find procedure

This procedure applies to the developer's permanent employees, its subsidiaries, contractors and subcontractors, and service providers. The aim of this procedure is to establish monitoring and reporting procedures to ensure compliance with this policy and its associated procedures. Construction crews must be properly inducted to ensure they are fully aware of the procedures regarding chance finds as discussed below.

- If during the pre-construction phase, construction, operations or closure phases of this project, any person employed by the developer, one of its subsidiaries, contractors and subcontractors, or service provider, finds any artefact of cultural significance or heritage site, this person must cease work at the site of the find and report this find to their immediate supervisor, and through their supervisor to the senior on-site manager.
- It is the responsibility of the senior on-site Manager to make an initial assessment of the extent of the find, and confirm the extent of the work stoppage in that area.
- The senior on-site Manager will inform the ECO of the chance find and its immediate impact on operations. The ECO will then contact a professional archaeologist for an assessment of the finds who will notify the SAHRA.

In terms of the built environment of the area (Section 34), the road was already in existence by the early 1930s and many of the structures bordering the road already existed by 1939. These structures are protected by legislation. Based on the current project proposal no structures are expected to be directly impacted on by the proposed road upgrade.

In terms of Section 36 of the Act no burial sites were recorded in the study area. However, if any graves are located in future they should ideally be preserved in-situ or alternatively relocated according to existing legislation.

The study area is surrounded by commercial and residential developments. The tree lined sections of Jan Smuts road were identified as part of the cultural landscape (Street scape and view scape) and will be negatively impacted on by the proposed road upgrade. This tree lane is not listed under the 2016 list of Champion Trees of South Africa nor currently protected under the Individual Trees and Groups of Trees Declared as Protected under Section 12 of the National Forests Act of 1998 by the Department of Agriculture, Forestry and Fisheries. Pending comment from SAHRA this aspect will require further investigation by a conservation architect as a second phase of study.

There is from an archaeological point of view no reason why the development cannot commence based on approval from SAHRA.

7.1 Reasoned Opinion

From an archaeological perspective, the proposed project is acceptable. If the above recommendations are adhered to and based on approval from SAHRA, HCAC is of the opinion that the development can continue as the development will not impact negatively on the archaeological record of the area. In terms of the tree lined avenue a second phase of study by a conservation architect will assess the impact on the tree lined avenue pending the necessary comments from SAHRA.

If during the pre-construction phase or during construction, any archaeological finds are made (e.g. graves, stone tools and skeletal material), the operations must be stopped, and the archaeologist must be contacted for an assessment of the finds. Due to the subsurface nature of archaeological material and graves the possibility of the occurrence of unmarked or informal graves and subsurface finds cannot be excluded, but can be easily mitigated by preserving the sites *in-situ* within the development.

8. PROJECT TEAM

Jaco van der Walt, Project Manager

Liesl Bester, Archival Specialist

9. STATEMENT OF COMPETENCY

I (Jaco van der Walt) am a member of ASAPA (no 159), and accredited in the following fields of the CRM Section of the association: Iron Age Archaeology, Colonial Period Archaeology, Stone Age Archaeology and Grave Relocation. This accreditation is also acknowledged by SAHRA and AMAFA.

I have been involved in research and contract work in South Africa, Botswana, Zimbabwe, Mozambique, Tanzania and the DRC; having conducted more than 300 AIA's since 2000.

10. REFERENCES

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