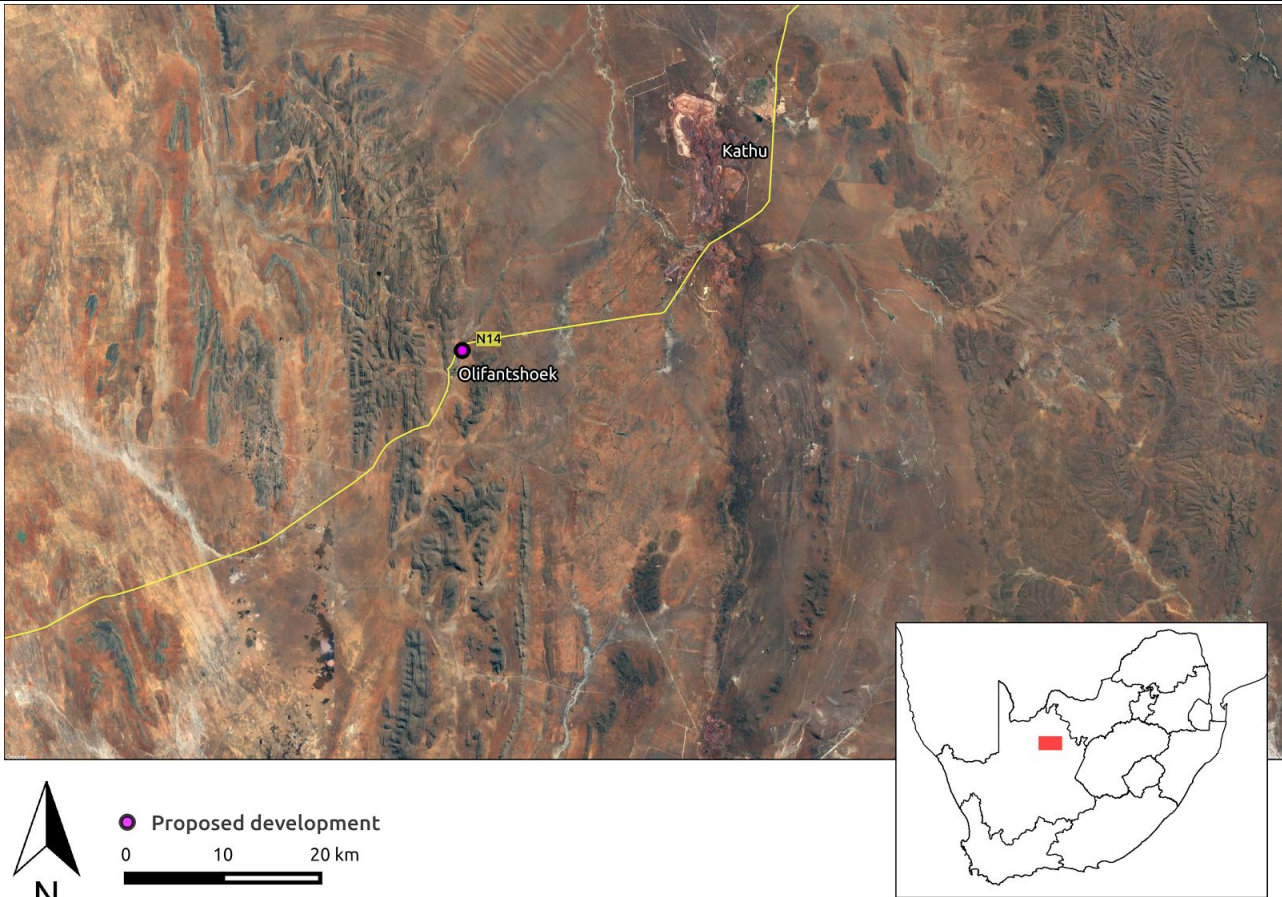


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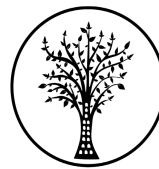
HERITAGE SCREENER

| | |
|--|--|
| CTS Reference Number: | CTS16_048 |
| SAHRIS CaseID | 11676 |
| Client: | Savannah Environmental |
| Date: | 14 September 2017 |
| Title: | Proposed Eskom Substation, Olifantshoek, Northern Cape |
|  <p>Figure 1a. Satellite Map indicating the location of the proposed development in the Northern Cape Province.</p> | |
| Recommendation by CTS Heritage Specialists: (Type 1) | <p>RECOMMENDATION: The heritage resources in the area proposed for development are sufficiently recorded - The disturbed nature of the development area suggests that heritage resources are unlikely to be impacted by this development. A HIA has already been undertaken in this specific region for a power line. As such, it is recommended that</p> <ul style="list-style-type: none">- No further heritage studies are required- If any heritage resources are discovered during the construction phase of the proposed development, the SAHRA APM unit should be contacted immediately |

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1. Proposed Development Summary

Eskom is proposing to establish a new substation which will be used to increase customers Notified Maximum Demand (NMD) from 2.5MVA to 10 MVA as a provision for future developments within the Olifantshoek region. This project is referred to as the Olifantshoek Substation. This report deals with the proposed substation only, which will comprise of the following:

- A new 10MVA on-site substation (100m X 100m)
- The decommissioning of the existing 22/11kV Olifantshoek Substation

2. Application References

| | |
|---|---|
| Name of relevant heritage authority(s) | South African Heritage Resources Agency (SAHRA) |
| Name of decision making authority(s) | Department of Environmental Affairs (DEA) |

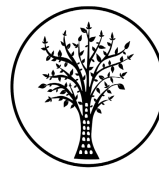
3. Property Information

| | |
|--------------------------------------|--|
| Latitude / Longitude | Preferred: 22.7484741193 E; -27.9313869428 S. Alternative: 22.7413899869 E; -27.9364361114 S |
| Erf number / Farm number | Preferred: Farm Neylan 1/574. Alternative: Erf 155 |
| Local Municipality | Gamagara Local Municipality |
| District Municipality | John Taolo Gaetsewe District Municipality |
| Previous Magisterial District | Postmasburg |
| Province | Northern Cape |
| Current Use | Rural, servitude |
| Current Zoning | NA |
| Total Extent | NA |

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4. Nature of the Proposed Development

| | |
|---|-----------------------------|
| Surface area to be affected/destroyed | 10 000m ² (1 ha) |
| Depth of excavation (m) | None anticipated |
| Height of development (m) | Unknown |
| Expected years of operation before decommission | NA |

5. Category of Development

| | |
|---|----------|
| Triggers: Section 38(8) of the National Heritage Resources Act | X |
| Triggers: Section 38(1) of the National Heritage Resources Act | |
| 1. Construction of a road, wall, powerline, pipeline, canal or other similar form of linear development or barrier over 300m in length. | |
| 2. Construction of a bridge or similar structure exceeding 50m in length. | |
| 3. Any development or activity that will change the character of a site- | |
| a) exceeding 5 000m ² in extent | X |
| b) involving three or more existing erven or subdivisions thereof | |
| c) involving three or more erven or divisions thereof which have been consolidated within the past five years | |
| 4. Rezoning of a site exceeding 10 000m ² | |
| 5. Other (state): | |

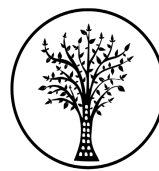
6. Additional Infrastructure Required for this Development

| |
|----|
| NA |
|----|

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7. Mapping (please see Appendix 3 and 4 for a full description of our methodology and map legends)

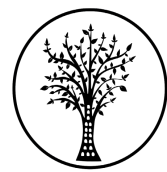


Figure 1b. Overview Map. Satellite image indicating the substation alternatives in relation to Olifantshoek town and the N14 highway.

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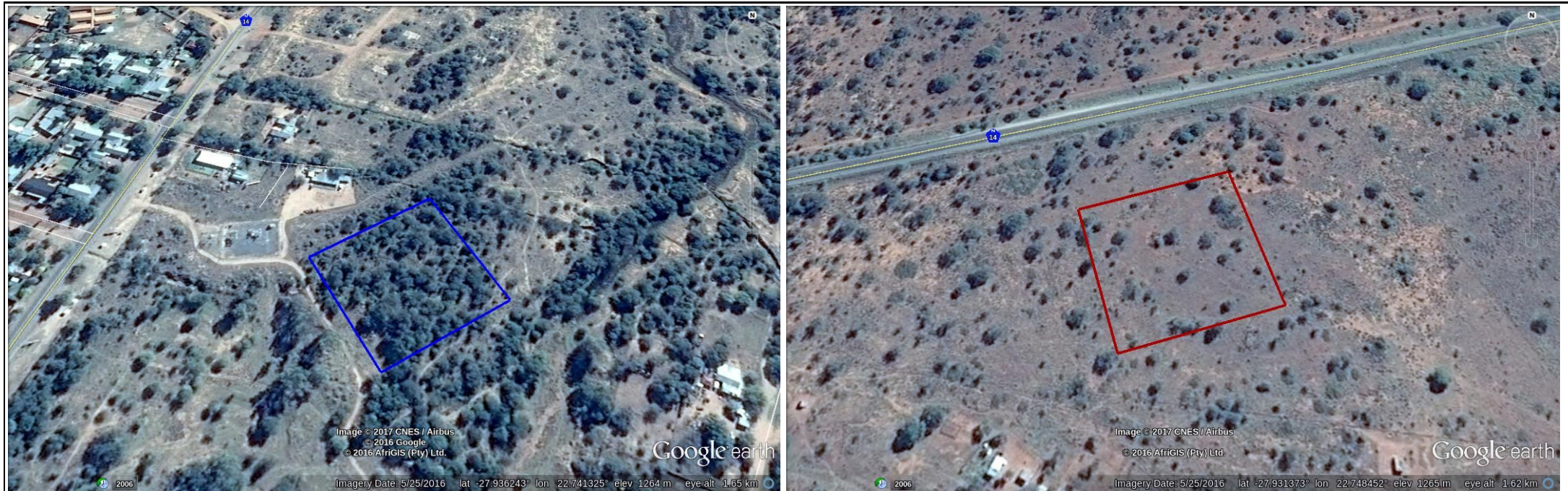
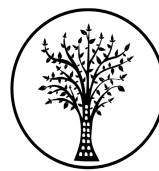


Figure 1c. Google satellite image, indicating the substation options (Alternative Option in blue and Preferred Option in Red) in proximity to the town of Olifantshoek and the N14 highway. North is directed upward.

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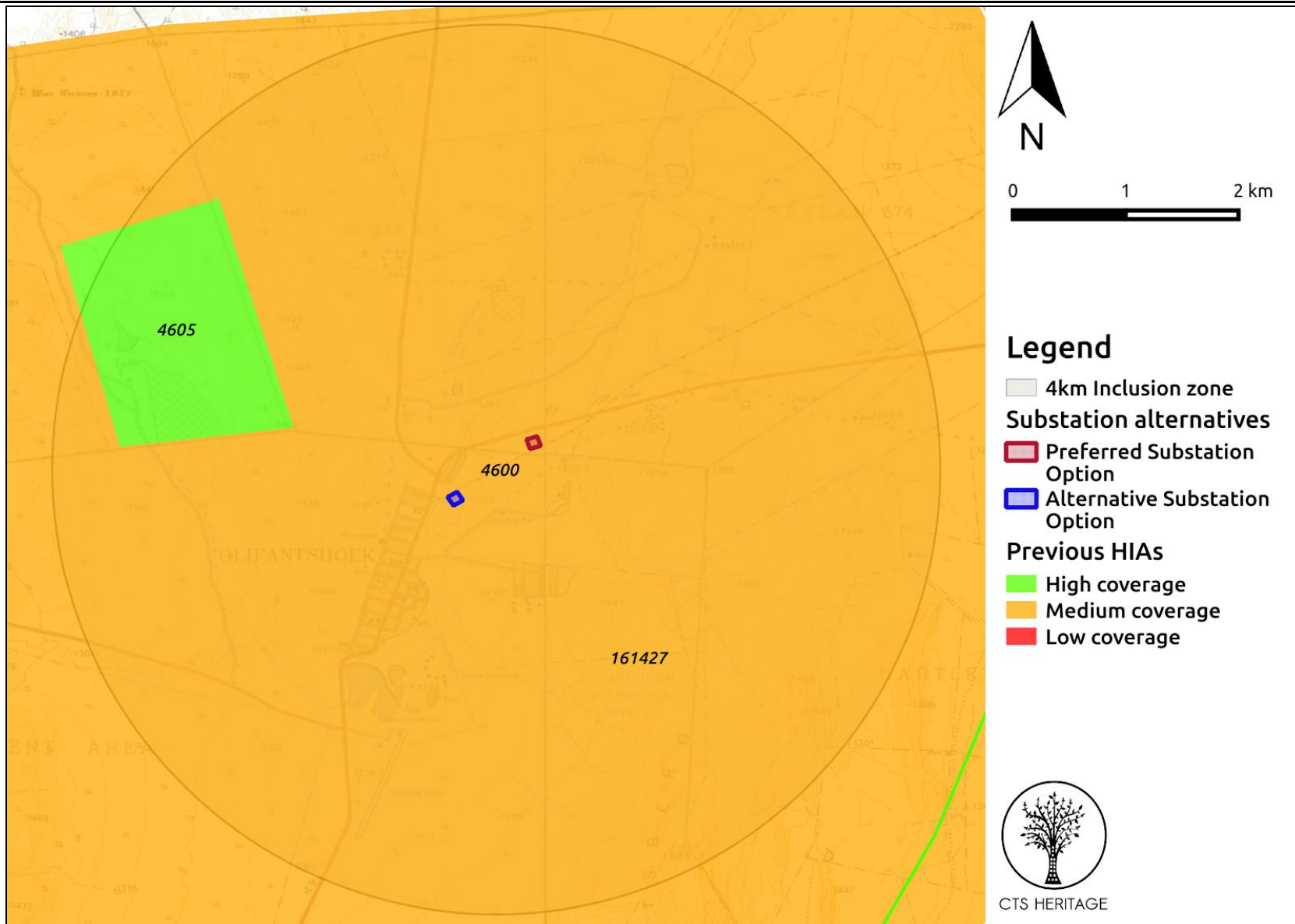
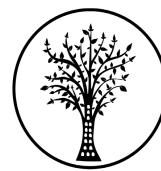


Figure 2. Heritage Reports Map. Previous Heritage Impact Assessments conducted within 4km of the proposed development, with SAHRIS NIDs indicated.

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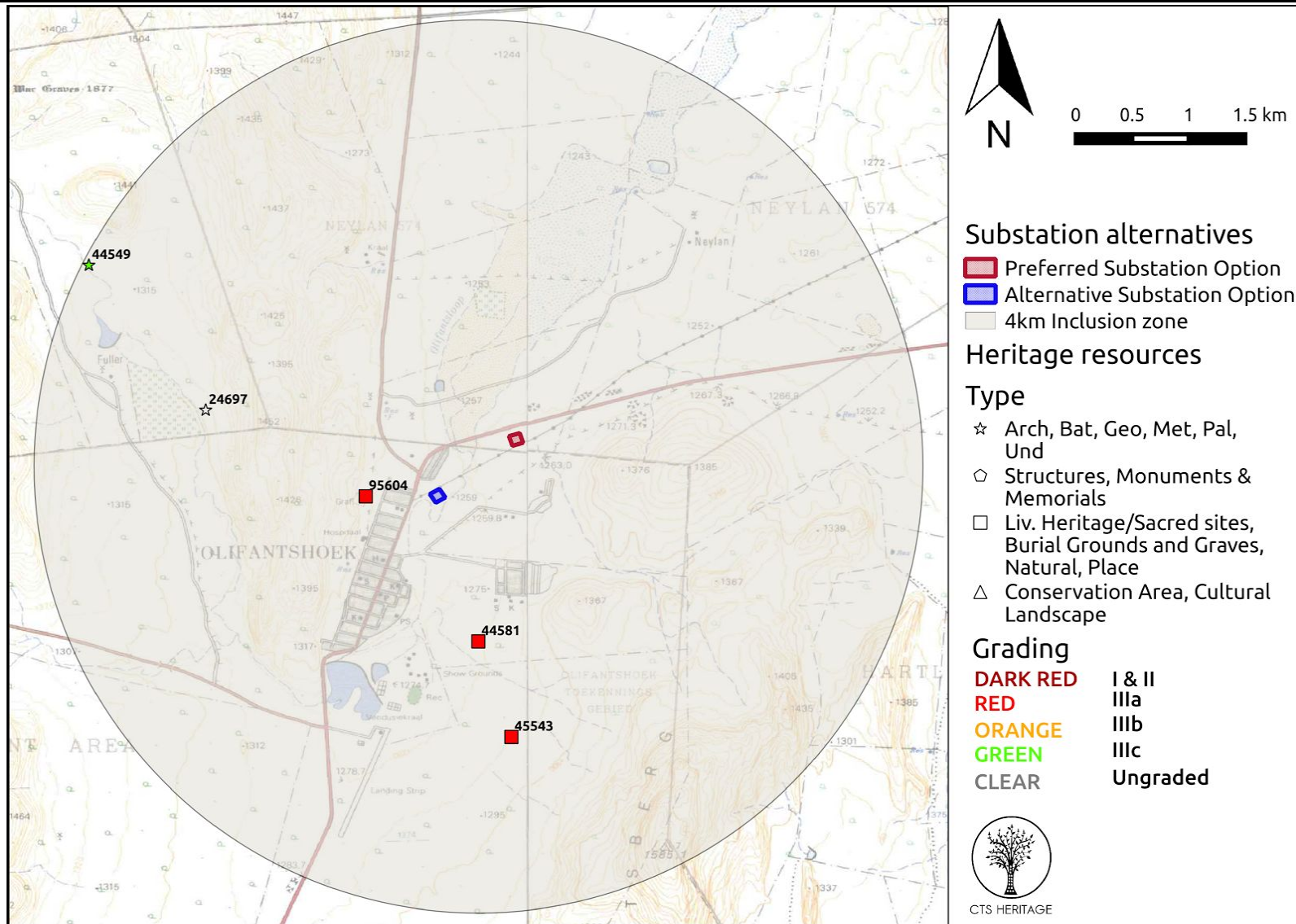
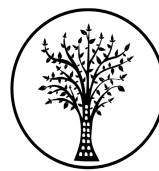


Figure 3. Heritage Resources Map (with SAHRIS Site IDs) indicating the distance of the proposed development from the Olifantshoek cemetery (SID 95604) and surrounding heritage sites.

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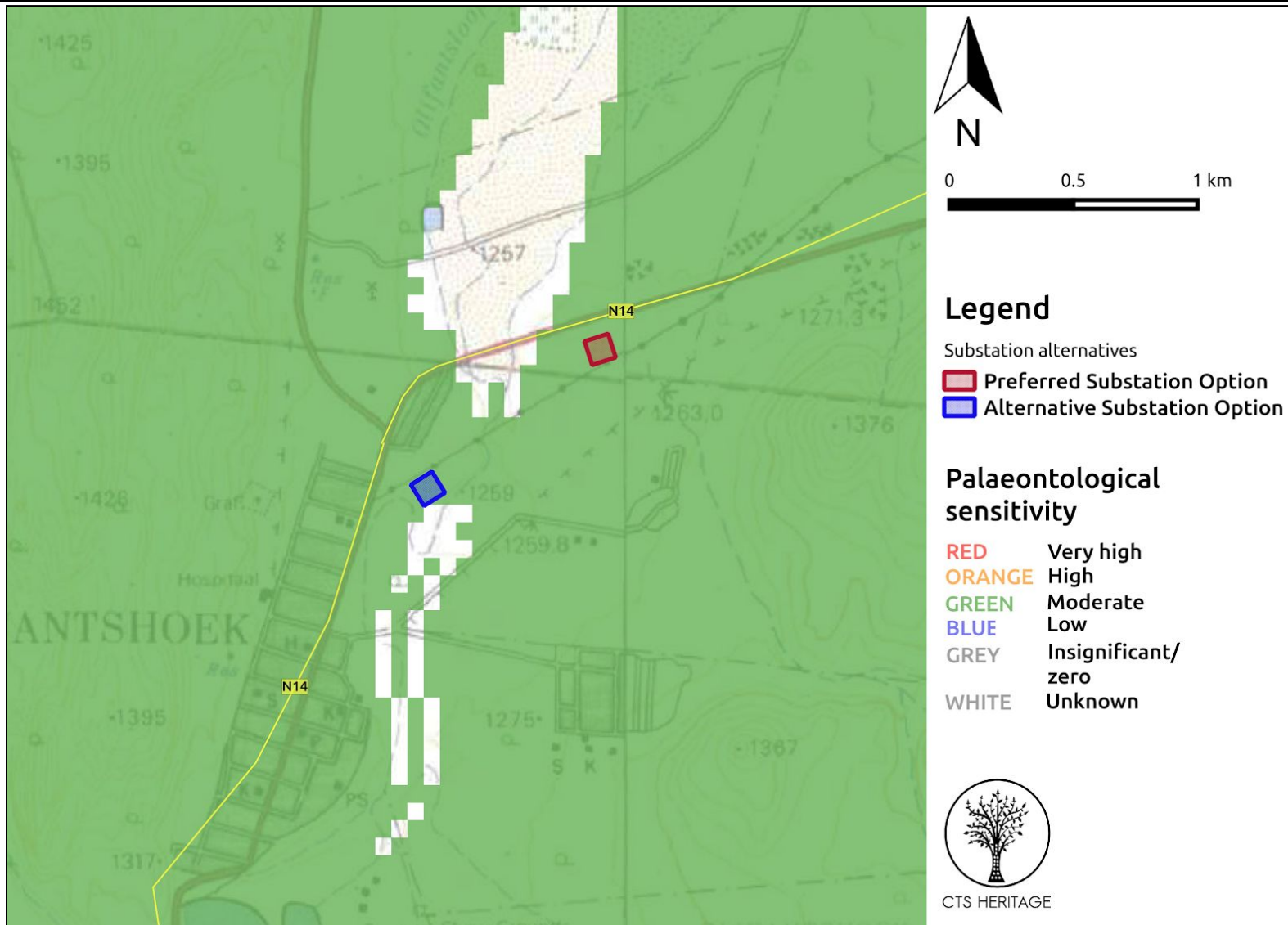
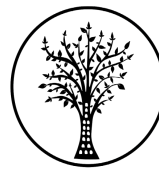


Figure 4. Palaeo-Map. Palaeosensitivity of the study area, indicating the underlying moderate (green) palaeontologically sensitive areas. See Appendix 3 for full guide to the legend.

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8. Updated Heritage statement and character of the area

Savannah Environmental is managing the Basic Assessment process for a proposed Eskom substation within the Olifantshoek region. This project entails the construction of a new substation, and the decommissioning of the existing Olifantshoek substation. This report deals with the proposed substation only, which will comprise of the following: A new 10MVA substation (100m X 100m) and the decommissioning of the existing 22/11kV Olifantshoek Substation.

The entire footprint of the Olifantshoek Substation project has previously undergone a Heritage Impact Assessment (HIA) (Gaigher 2014, NID 161427 and Beaumont 2007, NID 4600). Gaigher's assessment was conducted for the Solar-Ferrum 400kV Power Line (Case ID 5323). His report concluded that only ephemeral scatters of Stone Age artefacts of low significance were located in the vicinity of the power line, and he recorded no rock engravings or built environment sites - common site types to be found in this region. The only burial grounds site that Gaigher mentions is the Olifantshoek Cemetery (Site ID 95604), which will not be impacted by the proposed development. Beaumont's (2007) HIA located a burial ground (Site ID 44581) that he concluded to be from the early 1950's or late 1940's. He located some ephemeral stone age artefacts of low significance which he did not record, but found no archaeological or palaeontological sites of value.

According to the SAHRA Palaeosensitivity map, the area is underlain by formations of moderate (Gordonia Formation) and unknown palaeontological significance. The Gordonia Formation of the Kalahari Group consists of aeolian sands and fossils (bones, teeth, petrified wood, palynomorphs) mainly associated with ancient pans, lakes and river systems, however in a Palaeontological Impact Assessment by Almond (2012, NID 114648), it is stated that "*while a wide spectrum of vertebrate remains, invertebrates, trace fossils, plant fossils and microfossils have been recorded from these Kalahari Group sediments, in general they are of low palaeontological sensitivity and of considerable lateral extent so impacts on fossil heritage here are likely to be of low significance*". Considering these factors, and the fact that no deep excavation is anticipated to occur, it is unlikely that palaeontologically sensitive sediments will be impacted by the proposed development.

As can be seen in Figures 1b and 1c, the substation alternatives lie in close proximity to Olifantshoek town, in a previously disturbed context (Figure 1c and 1d). The Alternative Option for the substation is mapped in blue while the Preferred Substation option is mapped in red. The findings of the botanical studies, faunal studies and visual impact studies have all supported the identification of the Preferred Alternative for the proposed substation. In terms of impacts to heritage resources, due to the already disturbed nature of the Preferred Alternative (red), it is unlikely that the development of the substation in this location will impact on significant heritage resources.

Due to the previously disturbed nature of the proposed development area, as well as the extensive HIA coverage for the area from previous assessments, it is unlikely that the proposed substation will impact on significant heritage resources. As such, it is recommended that no further heritage studies are required. Should any heritage resources be discovered during the construction phase of the Olifantshoek Substation, work must cease and the SAHRA APM unit should be contacted immediately.

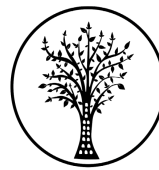
RECOMMENDATION: The heritage resources in the area proposed for development are sufficiently recorded - The disturbed nature of the development area suggests that heritage resources are unlikely to be impacted by this development. A HIA has already been undertaken in this specific region for a power line. As such, it is recommended that

- No further heritage studies are required
- If any heritage resources are discovered during the construction phase of the proposed development, the SAHRA APM unit should be contacted immediately.

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APPENDIX 1

List of heritage resources within 4km inclusion zone

| Site ID | Site no | Full Site Name | Site Type | Grading |
|---------|---------------------------------------|---------------------------------------|-------------------------|------------|
| 45543 | UPING12 | Upington 12 | Burial Grounds & Graves | Grade IIIa |
| 95604 | OFHC | Olifantshoek Cemetery | Burial Grounds & Graves | Grade IIIa |
| 44581 | SKERP-DIEP 01 | Skerpdraai-Diepkloof 01 | Burial Grounds & Graves | Grade IIIa |
| 44549 | FULL01 | Fuller 01 | Artefacts | Grade IIIc |
| 24697 | Site A, Farm Fuller 578, Olifantshoek | Site A, Farm Fuller 578, Olifantshoek | Archaeological | Ungraded |

APPENDIX 2

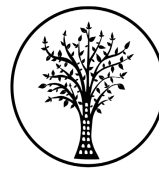
Reference List

| Heritage Impact Assessment References | | | | |
|---------------------------------------|-------------|-----------------|------------|--|
| Nid | Report Type | Author/s | Date | Title |
| 4600 | AIA | Peter Beaumont | 24/05/2007 | Phase 1 Heritage Impact Assessment Report on a 15 Ha Portion of the Allotment Area That Borders on the Skerpdraai and Diepkloof Townships at Olifantshoek, Gamagara Municipality, Northern Cape Province |
| 4605 | AIA | Peter Beaumont | 03/04/2007 | Phase 1 Heritage Impact Assessment Report on a Portion of the Farm Fuller 578 near Olifantshoek, Siyanda District Municipality, Northern Cape Province |
| 161427 | HIA | Stephan Gaigher | 15/04/2014 | Proposed Establishment of Several Electricity Distribution Lines within the Northern Cape Province |

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APPENDIX 3 - Keys/Guides

Key/Guide to Acronyms

| | |
|---------------|--|
| AIA | Archaeological Impact Assessment |
| DARD | Department of Agriculture and Rural Development (KwaZulu-Natal) |
| DEA | Department of Environmental Affairs |
| DEADP | Department of Environmental Affairs and Development Planning (Western Cape) |
| DEDEAT | Department of Economic Development, Environmental Affairs and Tourism (Eastern Cape) |
| DEDECT | Department of Economic Development, Environment, Conservation and Tourism (North West) |
| DEDT | Department of Economic Development and Tourism (Mpumalanga) |
| DEDTEA | Department Of economic Development, Tourism And Environmental Affairs (free State) |
| Denc | Department Of Environment And Nature Conservation (northern Cape) |
| DMR | Department of Mineral Resources |
| Gdard | Gauteng Department Of Agriculture And Rural Development (gauteng) |
| HIA | Heritage Impact Assessment |
| Ledet | Department Of Economic Development, Environment and Tourism (Limpopo) |
| MPRDA | Mineral and Petroleum Resources Development Act, no 28 of 2002 |
| NEMA | National Environmental Management Act, no 107 of 1998 |
| NHRA | National Heritage Resources Act, no 25 of 1999 |
| PIA | Palaeontological Impact Assessment |
| SAHRA | South African Heritage Resources Agency |
| SAHRIS | South African Heritage Resources Information System |
| VIA | Visual Impact Assessment |

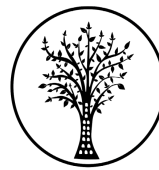
Full guide to Palaeosensitivity Map legend

| | | |
|--|-----------------------|--|
| | 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/PURPLE: | LOW - no palaeontological studies are required however a protocol for chance finds is required |
| | GREY: | INSIGNIFICANT/ZERO - no palaeontological studies are required |
| | WHITE/CLEAR: | UNKNOWN - these areas will require a minimum of a desktop study. |

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APPENDIX 4 - Methodology

The Heritage Screener summarises the heritage impact assessments and studies previously undertaken within the area of the proposed development and its surroundings. Heritage resources identified in these reports are assessed by our team during the screening process.

The heritage resources will be described both in terms of **type**:

- Group 1: Archaeological, Underwater, Palaeontological and Geological sites, Meteorites, and Battlefields
- Group 2: Structures, Monuments and Memorials
- Group 3: Burial Grounds and Graves, Living Heritage, Sacred and Natural sites
- Group 4: Cultural Landscapes, Conservation Areas and Scenic routes

and **significance** (Grade I, II, IIIa, b or c, ungraded), as determined by the author of the original heritage impact assessment report or by formal grading and/or protection by the heritage authorities.

Sites identified and mapped during research projects will also be considered.

DETERMINATION OF THE EXTENT OF THE INCLUSION ZONE TO BE TAKEN INTO CONSIDERATION

The extent of the inclusion zone to be considered for the Heritage Screener will be determined by CTS based on:

- the size of the development,
- the number and outcome of previous surveys existing in the area
- the potential cumulative impact of the application.

The inclusion zone will be considered as the region within a maximum distance of 50 km from the boundary of the proposed development.

DETERMINATION OF THE PALAEOLOGICAL SENSITIVITY

The possible impact of the proposed development on palaeontological resources is gauged by:

- reviewing the fossil sensitivity maps available on the South African Heritage Resources Information System (SAHRIS)
- considering the nature of the proposed development
- when available, taking information provided by the applicant related to the geological background of the area into account

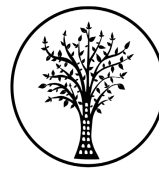
DETERMINATION OF THE COVERAGE RATING ASCRIBED TO A REPORT POLYGON

Each report assessed for the compilation of the Heritage Screener is colour-coded according to the level of coverage accomplished. The extent of the surveyed coverage is labeled in

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three categories, namely low, medium and high. In most instances the extent of the map corresponds to the extent of the development for which the specific report was undertaken.

Low coverage will be used for:

- desktop studies where no field assessment of the area was undertaken;
- reports where the sites are listed and described but no GPS coordinates were provided.
- older reports with GPS coordinates with low accuracy ratings;
- reports where the entire property was mapped, but only a small/limited area was surveyed.
- uploads on the National Inventory which are not properly mapped.

Medium coverage will be used for

- reports for which a field survey was undertaken but the area was not extensively covered. This may apply to instances where some impediments did not allow for full coverage such as thick vegetation, etc.
- reports for which the entire property was mapped, but only a specific area was surveyed thoroughly. This is differentiated from low ratings listed above when these surveys cover up to around 50% of the property.

High coverage will be used for

- reports where the area highlighted in the map was extensively surveyed as shown by the GPS track coordinates. This category will also apply to permit reports.

RECOMMENDATION GUIDE

The Heritage Screener includes a set of recommendations to the applicant based on whether an impact on heritage resources is anticipated. One of three possible recommendations is formulated:

(1) The heritage resources in the area proposed for development are sufficiently recorded - The surveys undertaken in the area adequately captured the heritage resources. There are no known sites which require mitigation or management plans. No further heritage work is recommended for the proposed development.

This recommendation is made when:

- enough work has been undertaken in the area
- it is the professional opinion of CTS that the area has already been assessed adequately from a heritage perspective for the type of development proposed

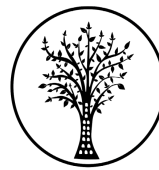
(2) The heritage resources and the area proposed for development are only partially recorded - The surveys undertaken in the area have not adequately captured the heritage resources and/or there are sites which require mitigation or management plans. Further specific heritage work is recommended for the proposed development.

This recommendation is made in instances in which there are already some studies undertaken in the area and/or in the adjacent area for the proposed development. Further studies in a limited HIA may include:

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- improvement on some components of the heritage assessments already undertaken, for instance with a renewed field survey and/or with a specific specialist for the type of heritage resources expected in the area
- compilation of a report for a component of a heritage impact assessment not already undertaken in the area
- undertaking mitigation measures requested in previous assessments/records of decision.

(3) The heritage resources within the area proposed for the development have not been adequately surveyed yet - Few or no surveys have been undertaken in the area proposed for development. A full Heritage Impact Assessment with a detailed field component is recommended for the proposed development.

Note:

The responsibility for generating a response detailing the requirements for the development lies with the heritage authority. However, since the methodology utilised for the compilation of the Heritage Screeners is thorough and consistent, contradictory outcomes to the recommendations made by CTS should rarely occur. Should a discrepancy arise, CTS will immediately take up the matter with the heritage authority to clarify the dispute.

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