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HERITAGE SCREENER

CTS Reference Number:	CTS15_038
Client:	SRK Consulting
Date:	19 November 2015
Title:	Desalination Plant near Port Elizabeth
	
Figure 1a. Satellite image with proposed development area indicated in the Eastern Cape.	
Recommendation by CTS Heritage Specialists: (Type 2)	<p>Orange Recommendation - The surveys undertaken in the area have not adequately captured the heritage resources. Further specific heritage work is recommended for the proposed development:</p> <ul style="list-style-type: none">- an Archaeological Impact Assessment must be undertaken- a Palaeontological Impact Assessment is <u>not</u> recommended- a fossil chance finds procedure should be included in the EMP



1. Proposed Development Summary

SRK Consulting is undertaking the EIA process on behalf of the Nelson Mandela Bay Municipality for the proposed development of a 60 ML/day desalination plant near Port Elizabeth to supply potable water to the municipality. Three potential alternative locations in the vicinity of Schoenmakerskop have been identified through a screening process. Alternative technologies and plant configurations are also being investigated.

2. Application References

Name of relevant heritage authority(s)	Eastern Cape Provincial Heritage Resources Agency (ECPHRA) South African Heritage Resources Agency (SAHRA)
Name of decision making authority(s)	DEDEAT (Department of Economic Development, Environmental Affairs and Tourism)

3. Property Information

Farm Name and Number	NA
Local Municipality	Nelson Mandela Bay Metropolitan Municipality
District Municipality	Nelson Mandela Bay Metro
Previous Magisterial District	Port Elizabeth
Province	Eastern Cape
Current Use	See zoning below
Current Zoning	Undefined, Community and Special Purpose (options 1 & 3); Undefined (option 2)
Total Extent	Approximately 50 000m ² (plus approximately 8.5km pipelines)

4. Nature of the Proposed Development

Surface area to be affected/destroyed	Maximum 50 000m ² plus approximately 8.5km pipelines
Depth of excavation (m)	Less than 10m
Height of development (m)	NA
Expected years of operation before decommission	Unknown

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.	X
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

The plant will require the construction of an intake pipeline and intake pump station to draw the water from the sea, as well as an outfall pipeline to discharge the leftover brine wastewater back into the sea. Pipelines will also be required between the intake pump station and the desalination plant.

7. Mapping

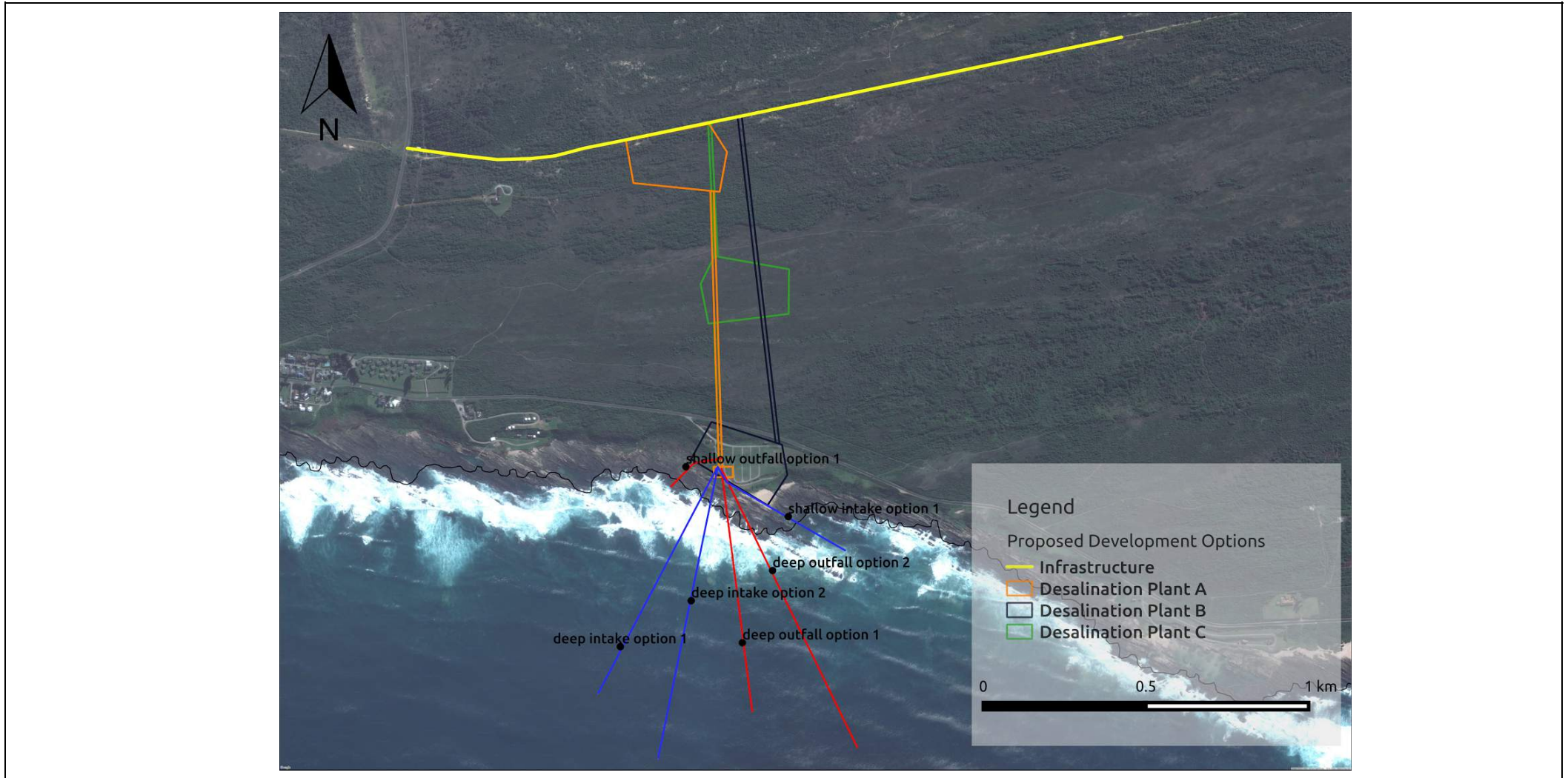


Figure 1b. Overview Map. Satellite image with proposed development indicated. **Note the yellow line depicts existing infrastructure.**



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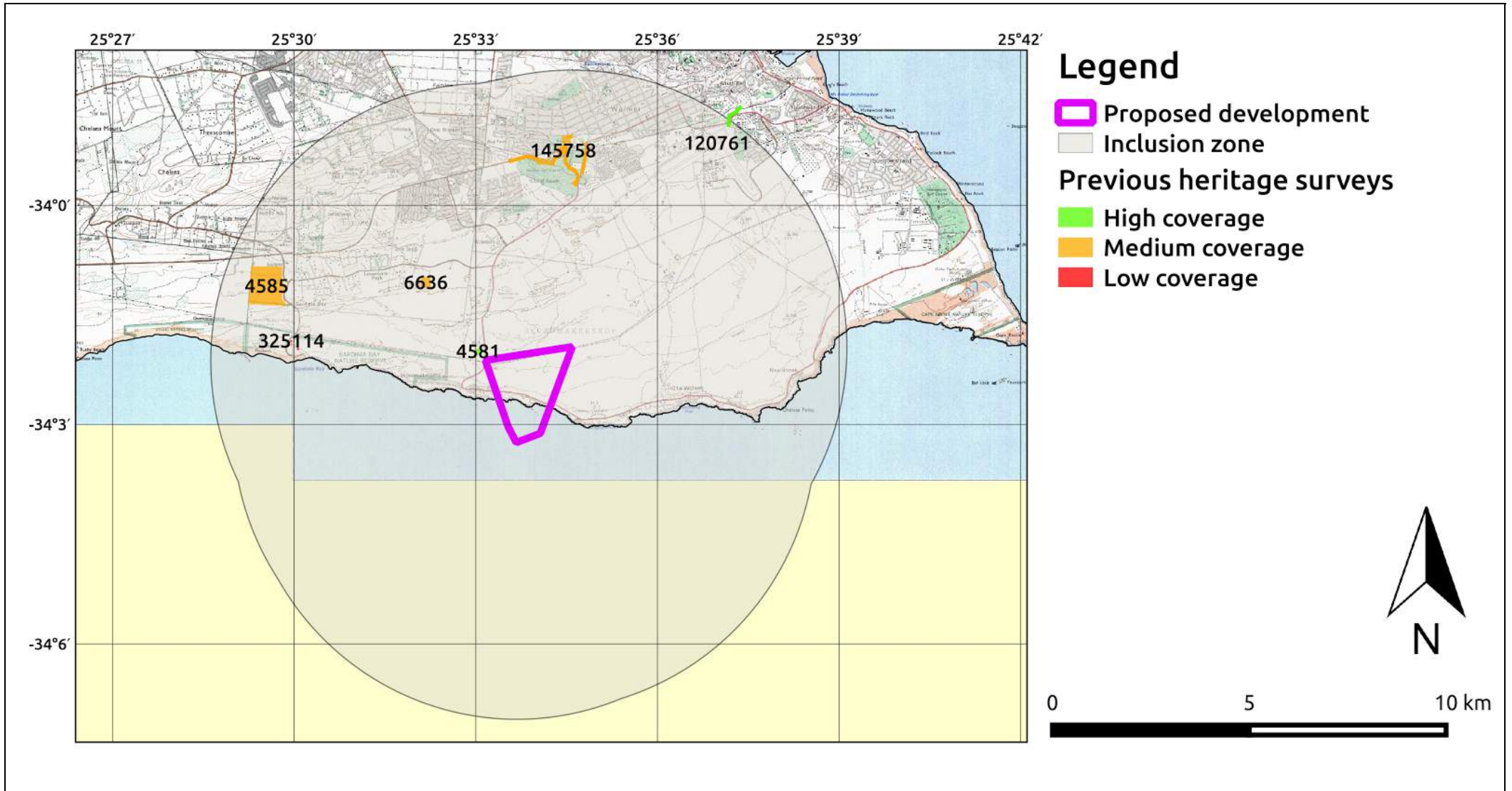


Figure 2a. HIAs Map. Previous Heritage Impact Assessments done in and near the proposed development area (PIAs excluded) with SAHRIS NID labels indicated.



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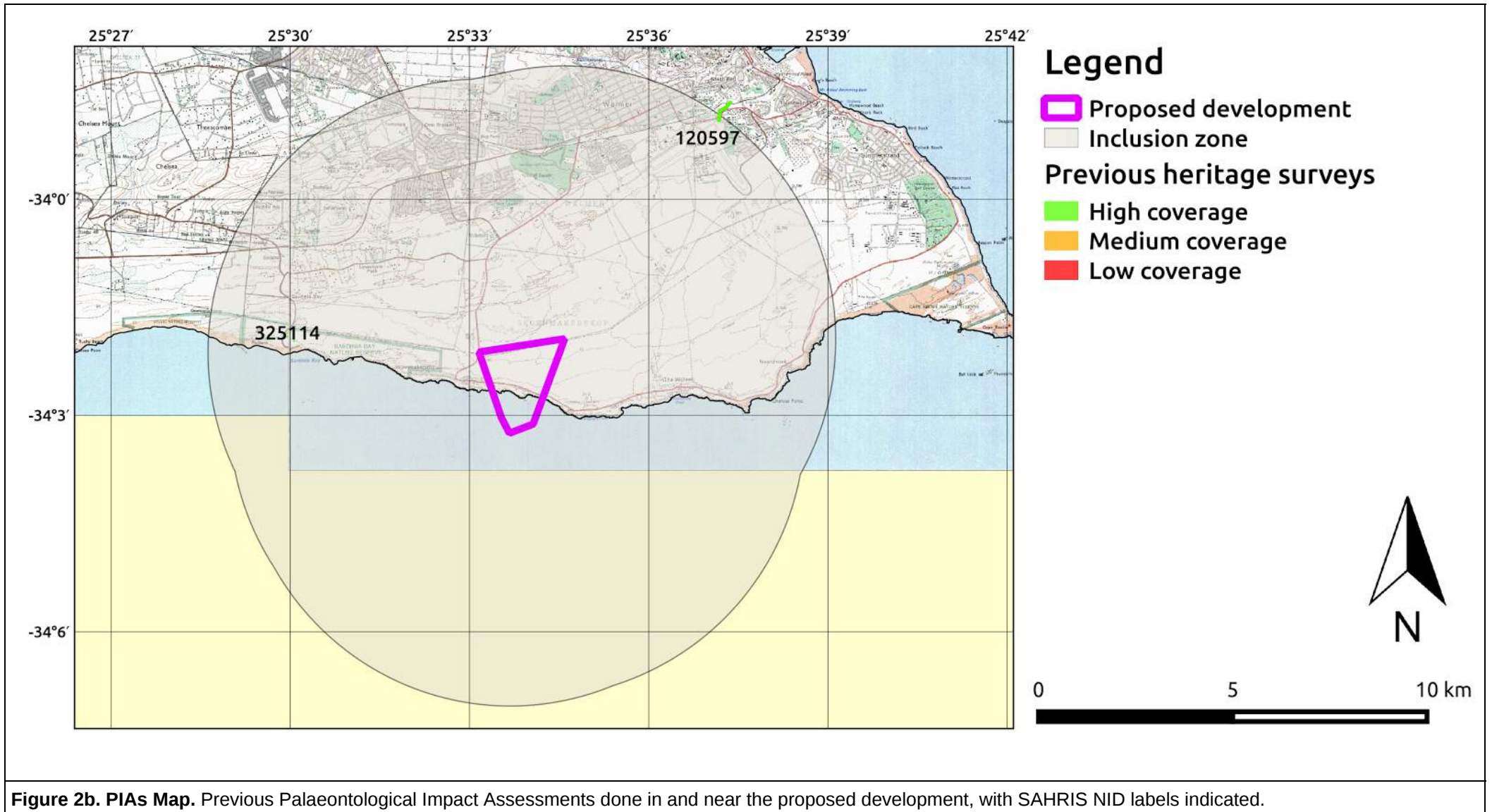


Figure 2b. PIAs Map. Previous Palaeontological Impact Assessments done in and near the proposed development, with SAHRIS NID labels indicated.



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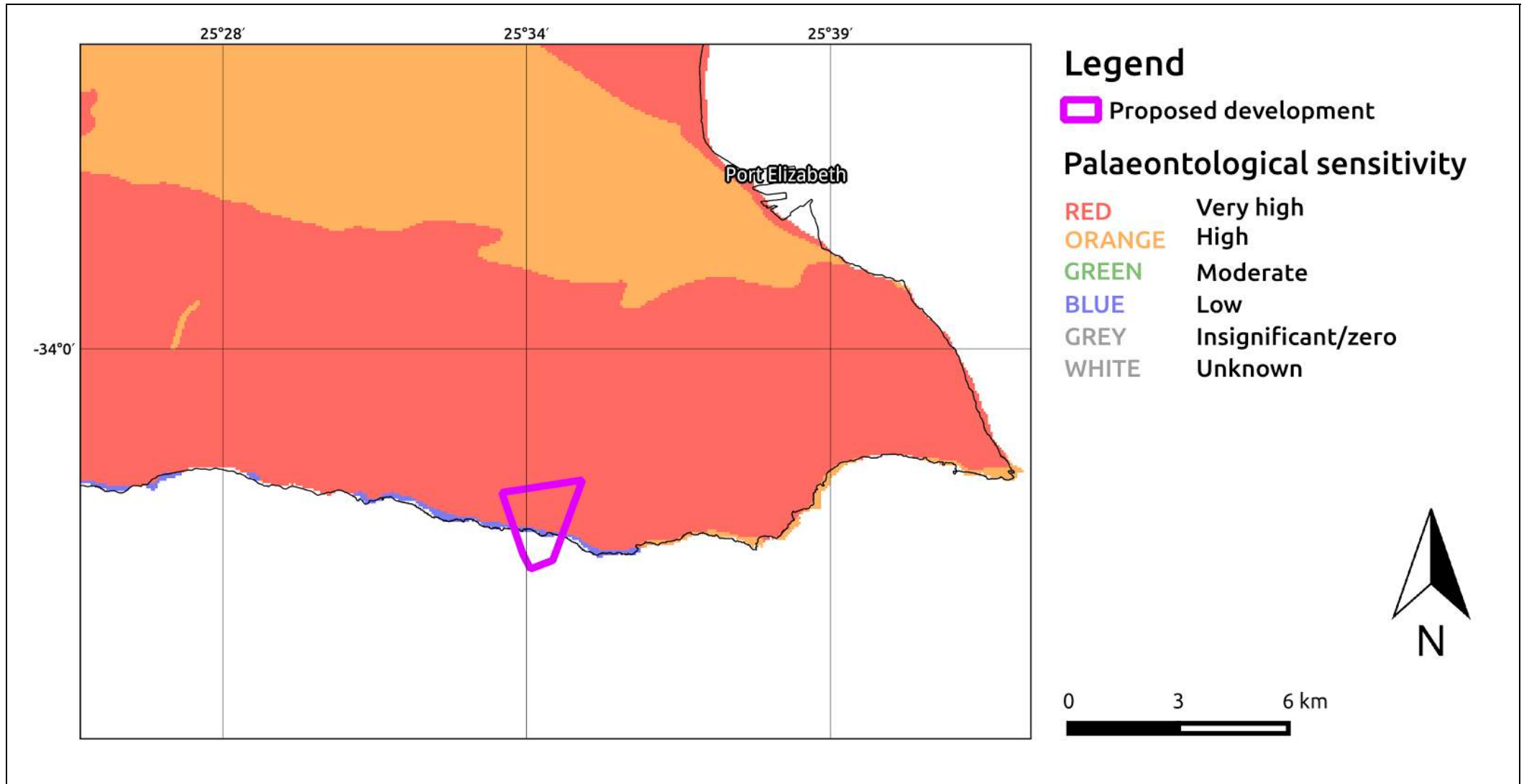


Figure 3. Palaeo Map. Palaeosensitivity of the study area. See Appendix 3 for full guide to the legend.



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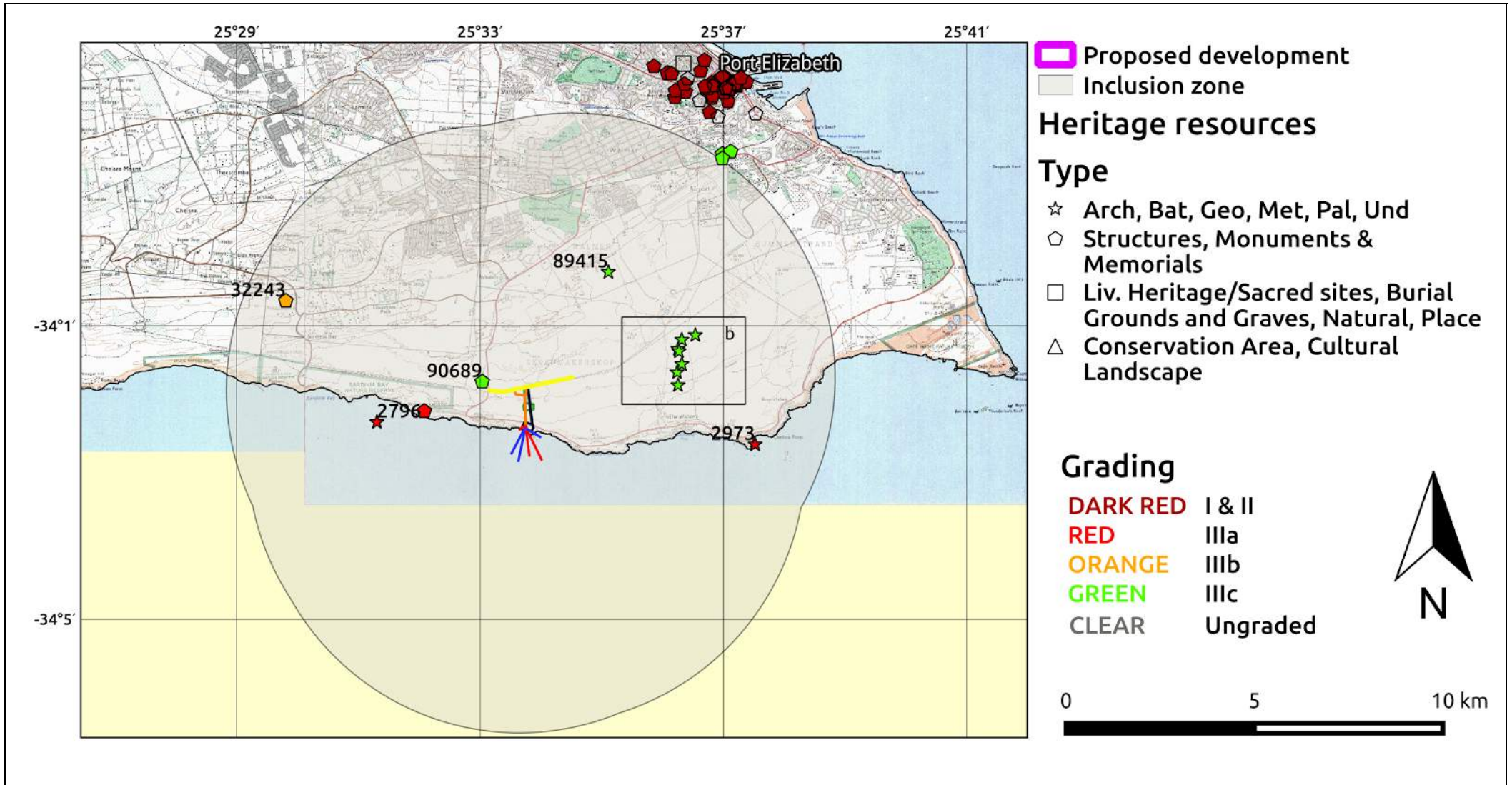


Figure 4a. Heritage Resources Map. Heritage resources previously identified in and near the study area, with SAHRIS Site IDs indicated (see figure 4b for inset).



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Figure 4b. Inset map.



8. Heritage statement and character of the area

SRK Consulting has been appointed by the Nelson Mandela Bay Municipality to conduct an Environmental Impact Assessment process for the proposed development of a 60 ML/day desalination plant and associated infrastructure near Port Elizabeth.

CTS considered an inclusion zone of 7km around the proposed development area. Six Archaeological Impact Assessments have been previously undertaken in the inclusion zone. During these surveys Stone Age sites of low significance were identified. None of these sites are within the development area and they are not expected to be impacted by the proposed development. There is a high probability that similar sites will be found when assessing the impact footprints of the various alternatives for the desalination plant, particularly in the largely undisturbed areas. **An Archaeological Impact Assessment undertaken by a Stone Age specialist is therefore recommended.**

The Sacramento shipwreck is located in Sardinia Bay. It was initially mapped on SAHRIS in the area where the intake and outfall pipelines are proposed but we have subsequently verified that this site is located further west and is not going to be impacted by this development. The site record on SAHRIS has been corrected accordingly.

According to the SAHRIS fossil sensitivity map most of the proposed development area is underlain by formations of very high fossil sensitivity (denoted in red in Figure 3). However, a letter of exemption from further palaeontological studies was accepted for the public access to Sardinia Bay Beach application earlier in 2015 (Almond 2015). The specialist stated that the **Sardinia Bay Formation** in this area is of low palaeontological significance as only low diversity assemblages of acritarchs and shallow marine trace fossils have previously been recorded. The coastal section of the area (denoted in blue in Figure 3) is underlain by Holocene unconsolidated aeolianites of the **Schelm Hoek Formation** which is ranges from unfossiliferous to sparsely fossiliferous, although *pockets of high sensitivity may occur locally* (Almond 2015). **We therefore do not recommend that another Palaeontological Impact Assessment be undertaken and a fossil chance finds procedure should be included in the EMP.**



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APPENDIX 1 - Site Lists

List of sites within 7km inclusion zone and outside proposed development area

Site ID	Site no	Full Site Name	Site Type	Grading
89415	Erf 1948, Walmer	Erf 1948, Walmer, Port Elizabeth, Eastern Cape	Artefacts	Grade IIIc
90689	SCHOEN 001	Schoenmakerskop 001	Structures, Artefacts	Grade IIIc
32243	Maitland Mines	Maitland Mines	Structures	Grade IIIb
2973	SHIPWRECKID2773	SS Strathblane	Shipwreck	Grade IIIa
90691	THEE 002	Theescombe 002	Artefacts	Grade IIIc
90692	THEE 003	Theescombe 003	Artefacts	Grade IIIc
90690	THEE 001	Theescombe 001	Shell Midden	Grade IIIc
90693	THEE 004	Theescombe 004	Artefacts	Grade IIIc
90694	THEE 005	Theescombe 005	Artefacts	Grade IIIc
90695	THEE 006	Theescombe 006	Artefacts	Grade IIIc
90696	THEE 007	Theescombe 007	Artefacts	Grade IIIc
2796	SHIPWRECKID2592	Santissimo Sacramento	Shipwreck	Grade IIIa
90781	Sacramento Monument	Sacramento Shipwreck Monument Cannon	Monument	Grade IIIa



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APPENDIX 2 - Reference List

Nid	Author/s	Date	Report Type	Title
4581	Lita Webley	12/5/2005	HIA	Phase 1 Heritage Impact Assessment Of A Proposed Water Reservoir Site Near Schoenmakerskop, Port Elizabeth
4585	Lita Webley	21/05/2007	HIA	Phase 1 Heritage Impact Assessment For The Establishment Of The Sardinia Bay Golf Estate (erf 378 - Theescombe), Port Elizabeth
6636	Johan Binneman	1/6/2008	AIA	Phase 1 Archaeological Heritage Impact Assessment Of The Proposed Development Of A Sand Quarry On Erf 429, Theescombe, Port Elizabeth, Nelson Mandela Bay Metropolitan, Eastern Cape Province
145758	Karen Van Ryneveld	8/3/2013	AIA	Phase 1 Archaeological Impact Assessment Walmer Stormwater Detention Ponds And Associated Infrastructure, Erven 1935 And 7006, Walmer, Nelson Mandela Bay Municipality, Eastern Cape, South Africa
325111	Johan Binneman	22/07/2015	AIA	A Phase 1 Archaeological Impact Assessment For The Proposed Development Of A Parking Bay And Associated Infrastructures At Sardinia Bay, Port Elizabeth, Nelson Mandela Bay Municipality, Eastern Cape Province
120761	Celeste Booth	29/05/2013	AIA	Archaeological Impact Assessment for the proposed Port Elizabeth Airport Stormwater Upgrade
120597	Rosemary Prevec	27/05/2013	PIA	Palaeontology Exemption letter for Port Elizabeth Airport Stormwater Upgrade
325114	John Almond	5/8/2015	PIA	Recommended Exemption From Further Palaeontological Studies: Public Access To Sardinia Bay Beach, Port Elizabeth, Nelson Mandela Bay Municipality, Eastern Cape









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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.



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



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.

The compilation of the Heritage Screener will not include any field assessment. The Heritage Screener will be submitted to the applicant within 24 hours from receipt of full payment. **If the 24-hour deadline is not met by CTS, the applicant will be refunded in full.**