CTS HERITAGE

HIGH-LEVEL DESKTOP HERITAGE REPORT

CTS Reference Number:	**CTS25_021**
Client:	**Blue Pebble**
Date:	**March 2025**
Title:	**WOODLANDS WASTEWATER TREATMENT WORKS (WWTW) AND SEWER RETICULATION UPGRADE FOR THE KOUKAMMA MUNICIPALITY**

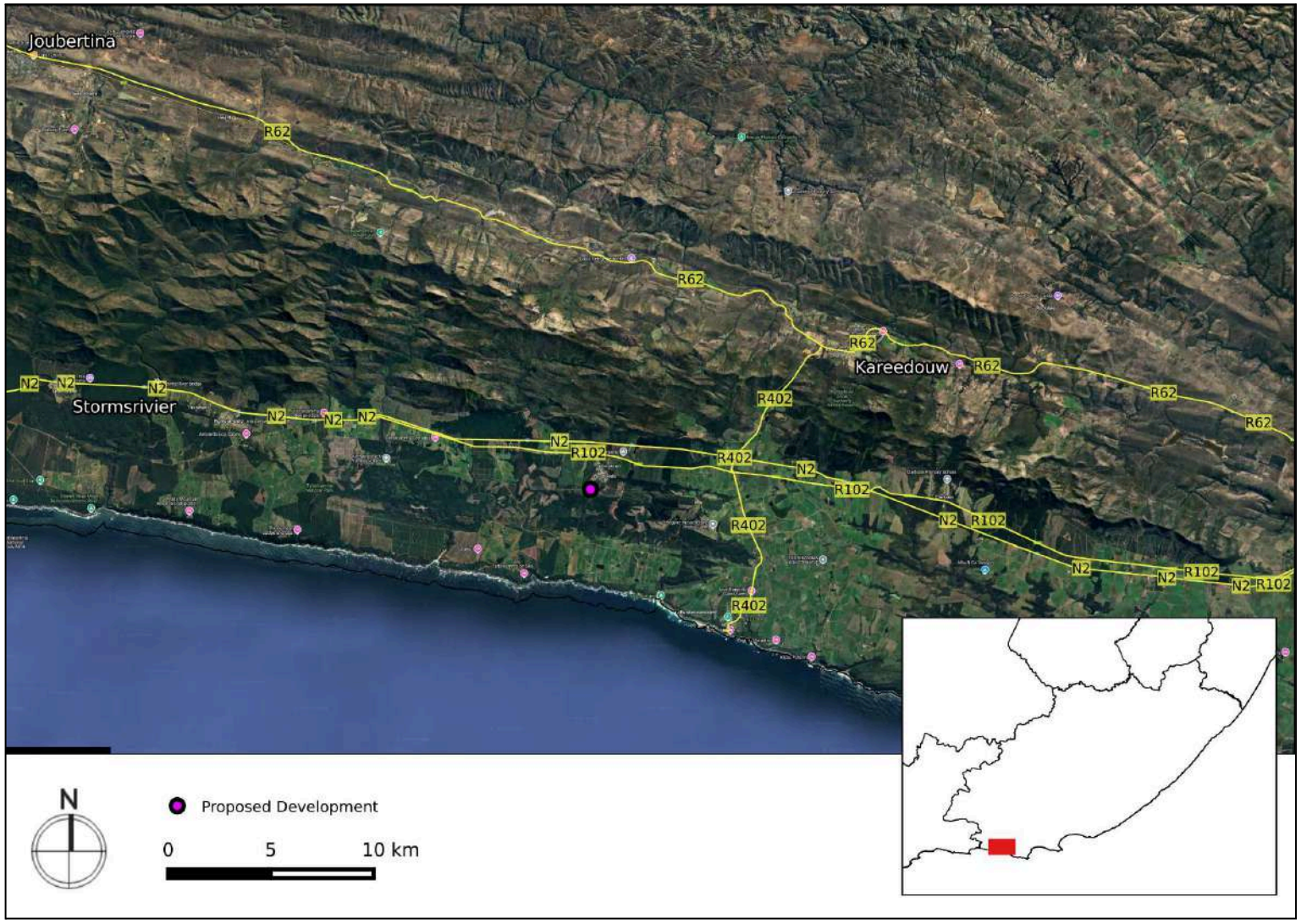

Figure 1a. Satellite map indicating the location of the proposed development in the Eastern Cape Province.

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1. Proposed Development Summary

Bluepebble Sustainable Solutions has been appointed by SMEC South Africa (Pty) Ltd to undertake a Basic Assessment process to ensure compliance with regulations contained in the National Environmental Management Act (NEMA Act No. 107 of 1998) and the Environmental Impact Assessment Regulations (2014), as amended, for the Woodlands Wastewater Treatment Works (WWTW) and sewer reticulation upgrade for the Koukamma Municipality.

The Woodlands sanitation services consist of digester tanks and a 110mm diameter small bore gravity sewer reticulation system. Effluent from digesters is regularly removed by means of vacuum tankers, transported, and disposed of at the Wastewater Treatment Works (WWTW) at Woodlands Settlement. The WWTW is located 0.5km south of the southwestern boundary of the Woodlands Settlement. Effluent then undergoes an activated sludge treatment process followed by a clarification process where the solids and liquid are separated before the final effluent is discharged into a surface water course. Sludge settlement is conveyed to a pit close to the treatment works where it is then disposed of. As soon as the hole is 80% full it is then backfilled, and a new hole is formed. The WWTW is capable of handling flows up to 400Kl/d of solids free sewage. The hydraulic and treatment capacity of the existing treatment plant will be further studied during the concept and design phases.

The proposed activities for the upgrade of bulk sewers, replacing of small-bore sanitation system at Woodlands is as follows:

- Replace Internal Sewer Reticulation of the woodlands area.
- Design new sewer infrastructure for the proposed development.
- Realign and replace the Bulk Sewer Main.
- Refurbish the existing Waste Water Treatment works.

2. Application References

Name of relevant heritage authority(s)	ECPHRA
Name of decision making authority(s)	DFFE

3. Property Information

Latitude / Longitude	24.1596118,-34.0126160
Erf number / Farm number	Remainder of Erf 1 Woodlands
Local Municipality	Koukamma
District Municipality	Sarah Baartman
Province	Eastern Cape

Current Use	Agriculture
Current Zoning	Agriculture

4. Nature of the Proposed Development

Total Surface Area of development	TBA
Depth of excavation (m)	TBA
Height of development (m)	TBA

5. Category of Development

X	**Triggers: Section 38(8) of the National Heritage Resources Act**
	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-
X	a) exceeding 5 000m^2 in extent
	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 10,000 m^2
	5. Other (state):

6. Additional Infrastructure Required for this Development

TBA

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

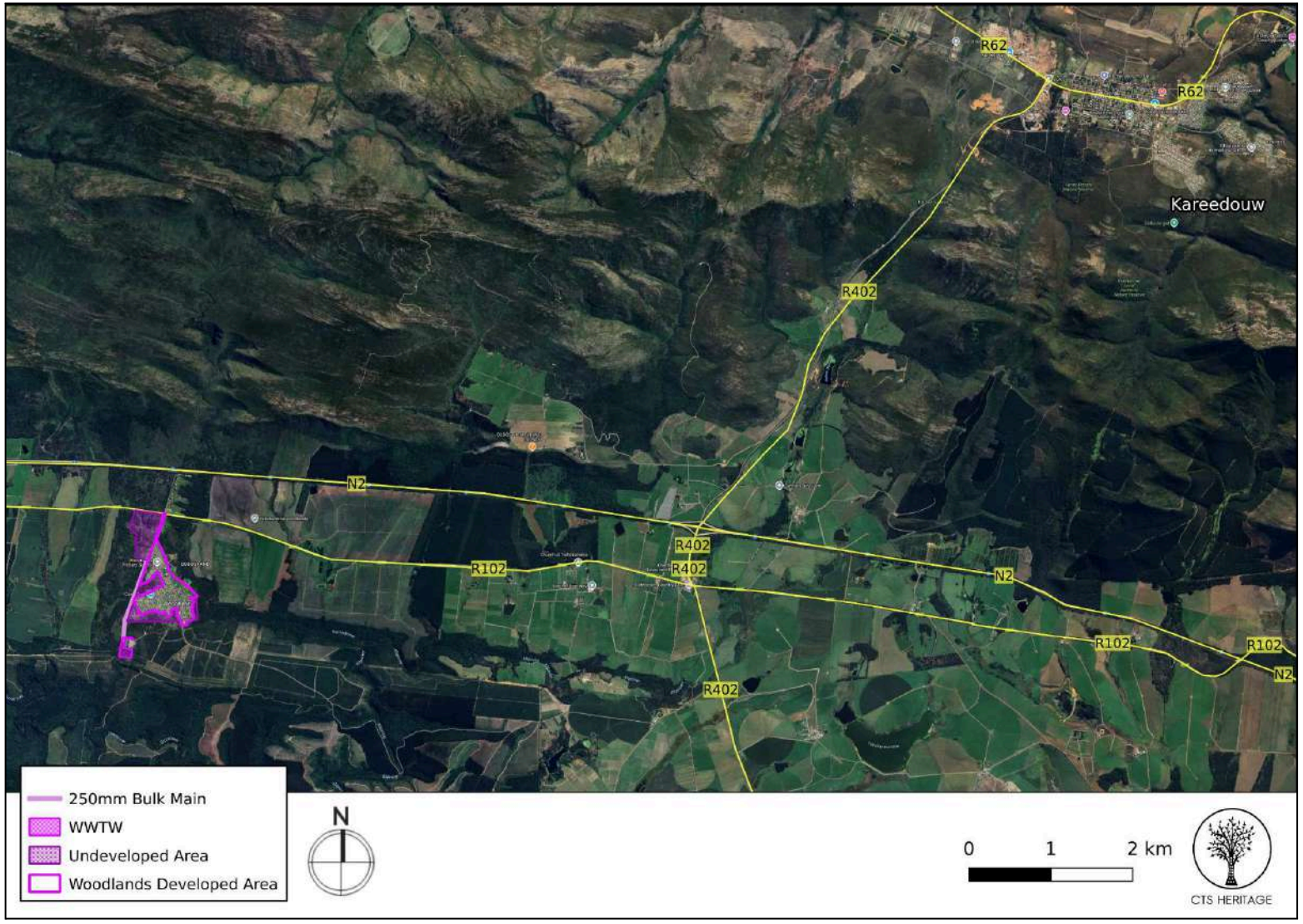

Figure 1b Overview Map. Satellite image (2025) indicating the proposed development area at closer range, relative to Kareedouw.

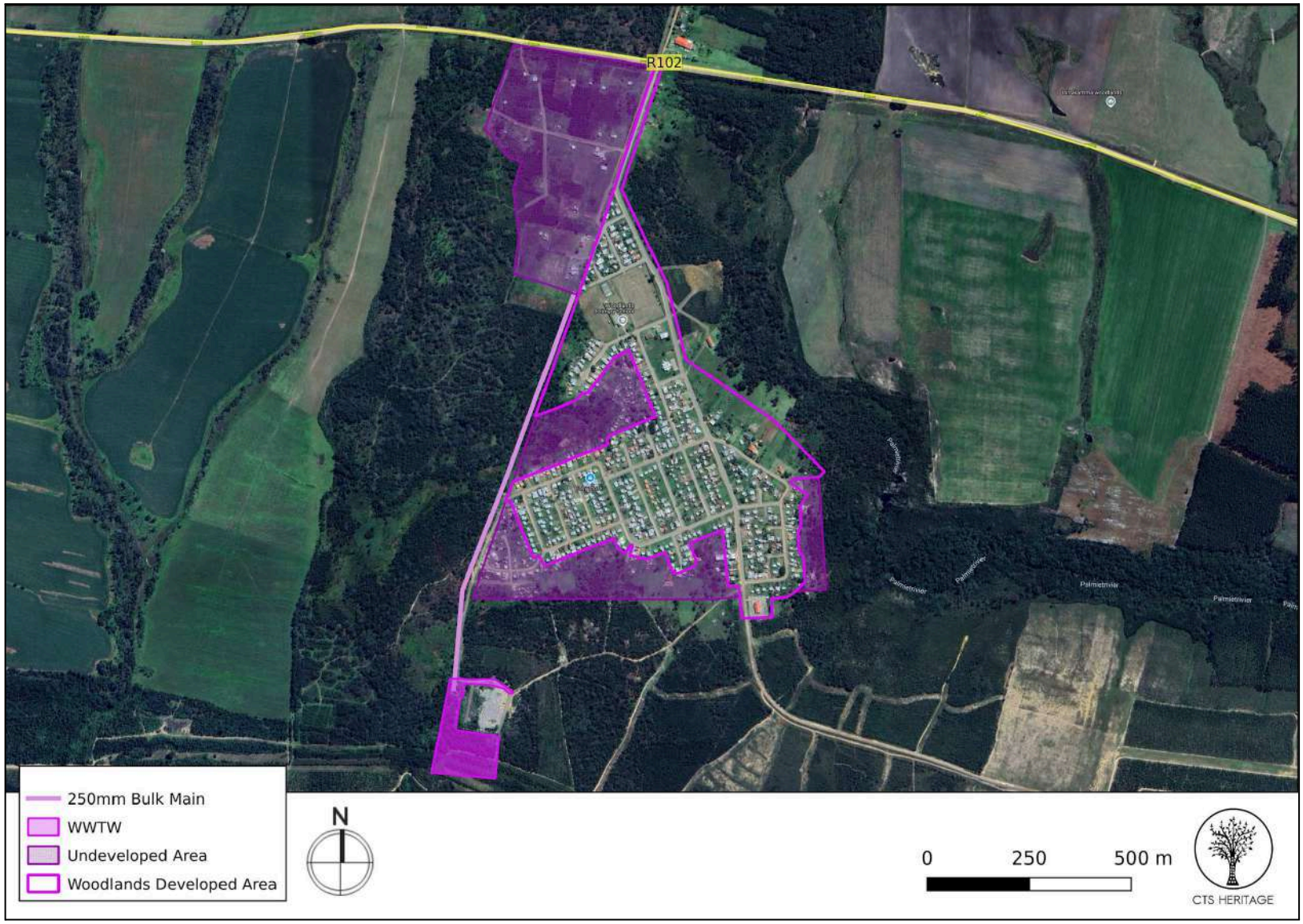

Figure 1c Overview Map. Satellite image (2025) indicating the proposed development area at closer range.

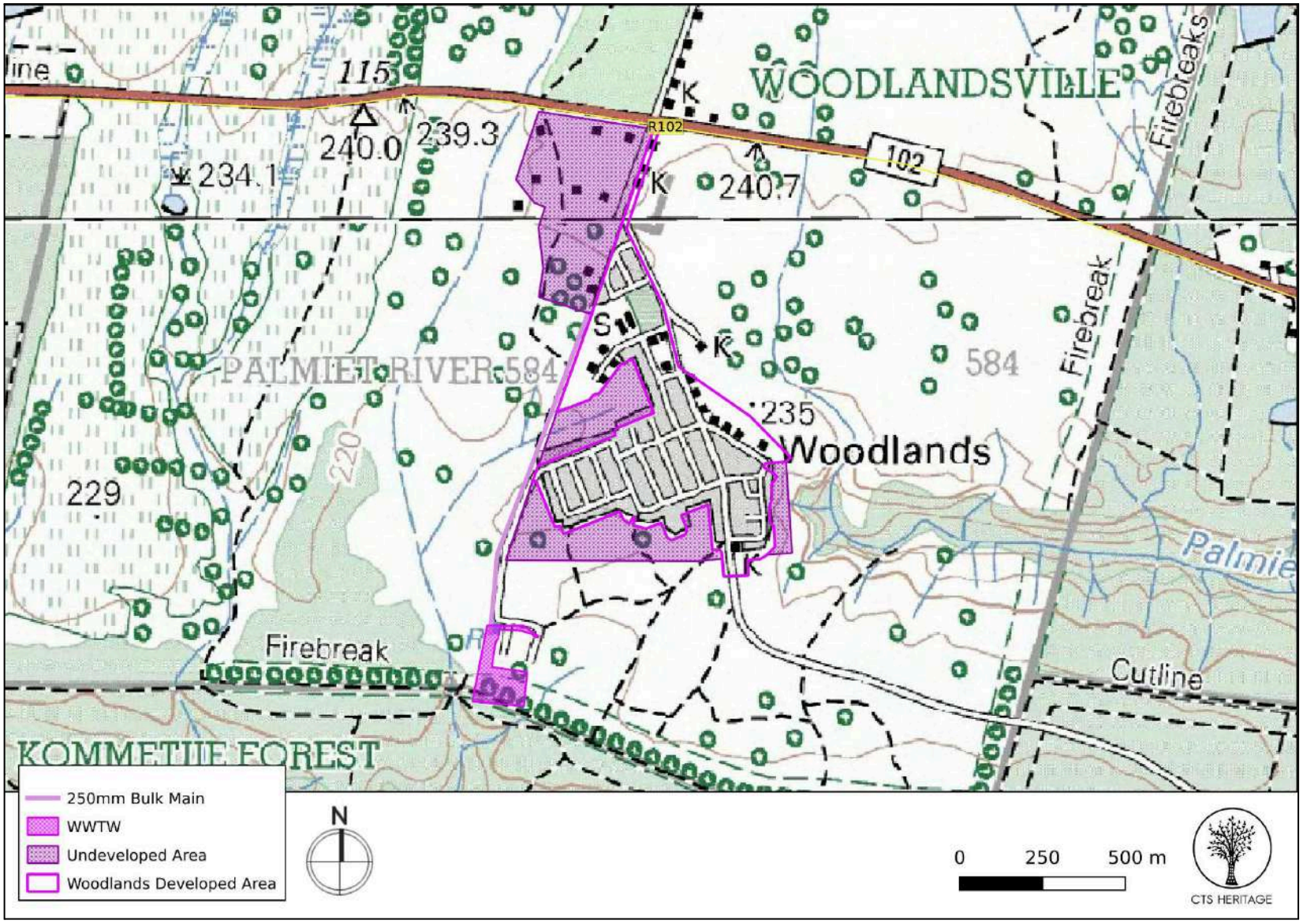

Figure 1d. Overview Map. 1:50 000 Topo Map for the development area

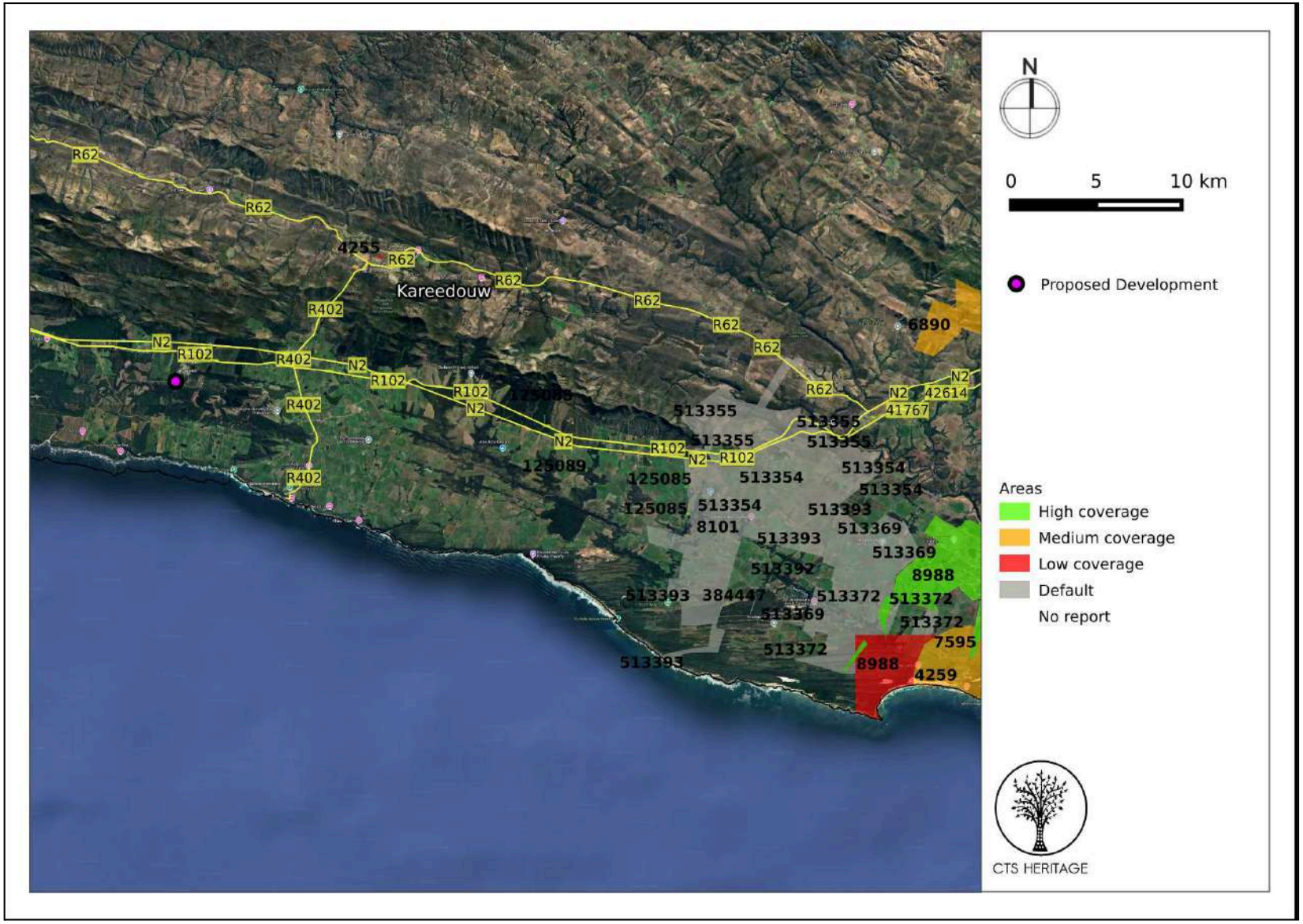

Figure 2. Previous HIAs Map. Previous Heritage Impact Assessments surrounding the proposed development area, with SAHRIS NIDS indicated. Please see Appendix 2 for a full reference list.

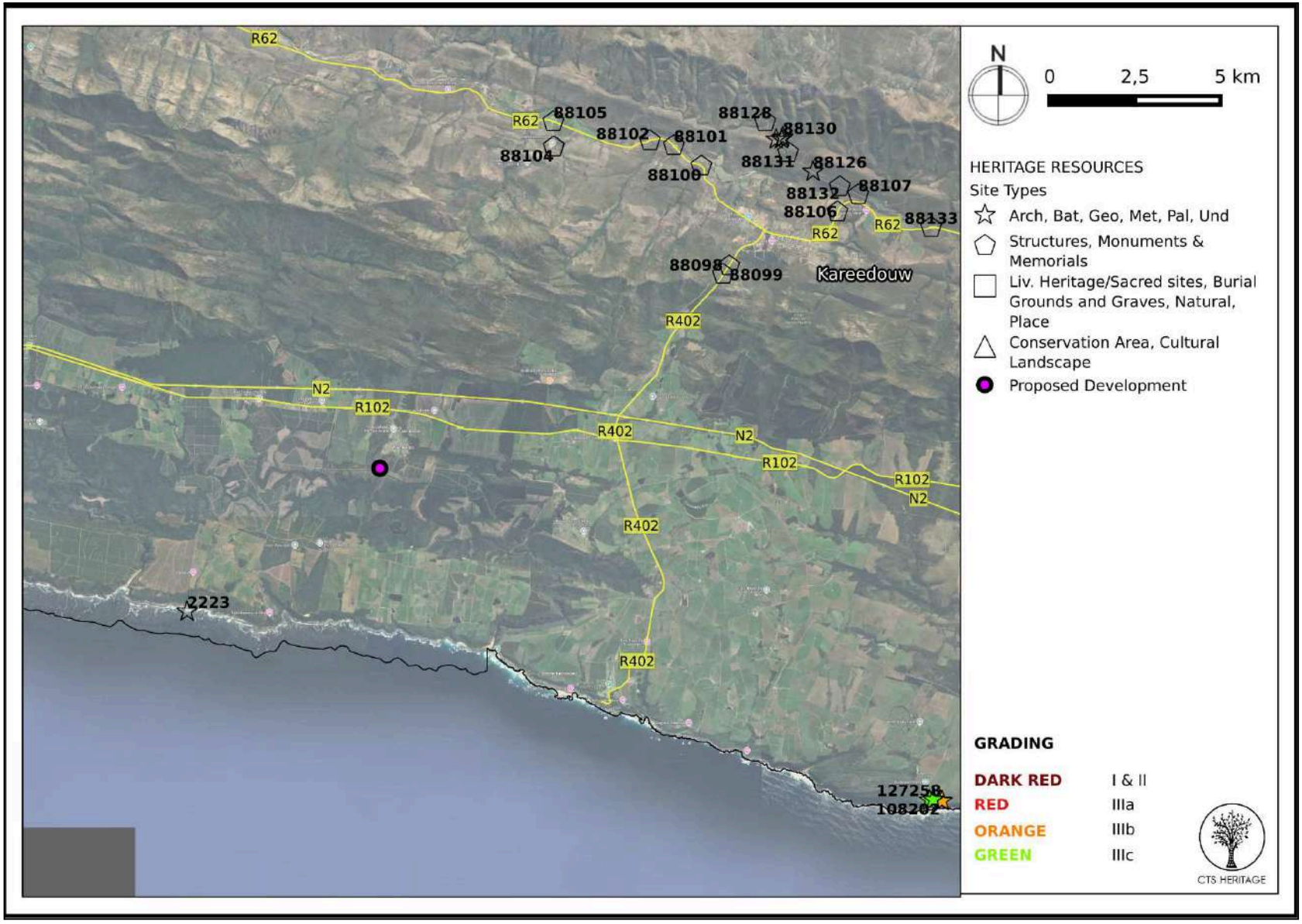

Figure 3.1. Heritage Resources Map. Heritage Resources previously identified in and near the study area, with SAHRIS Site IDs, indicated. Please See Appendix 4 for a full description of heritage resource types.

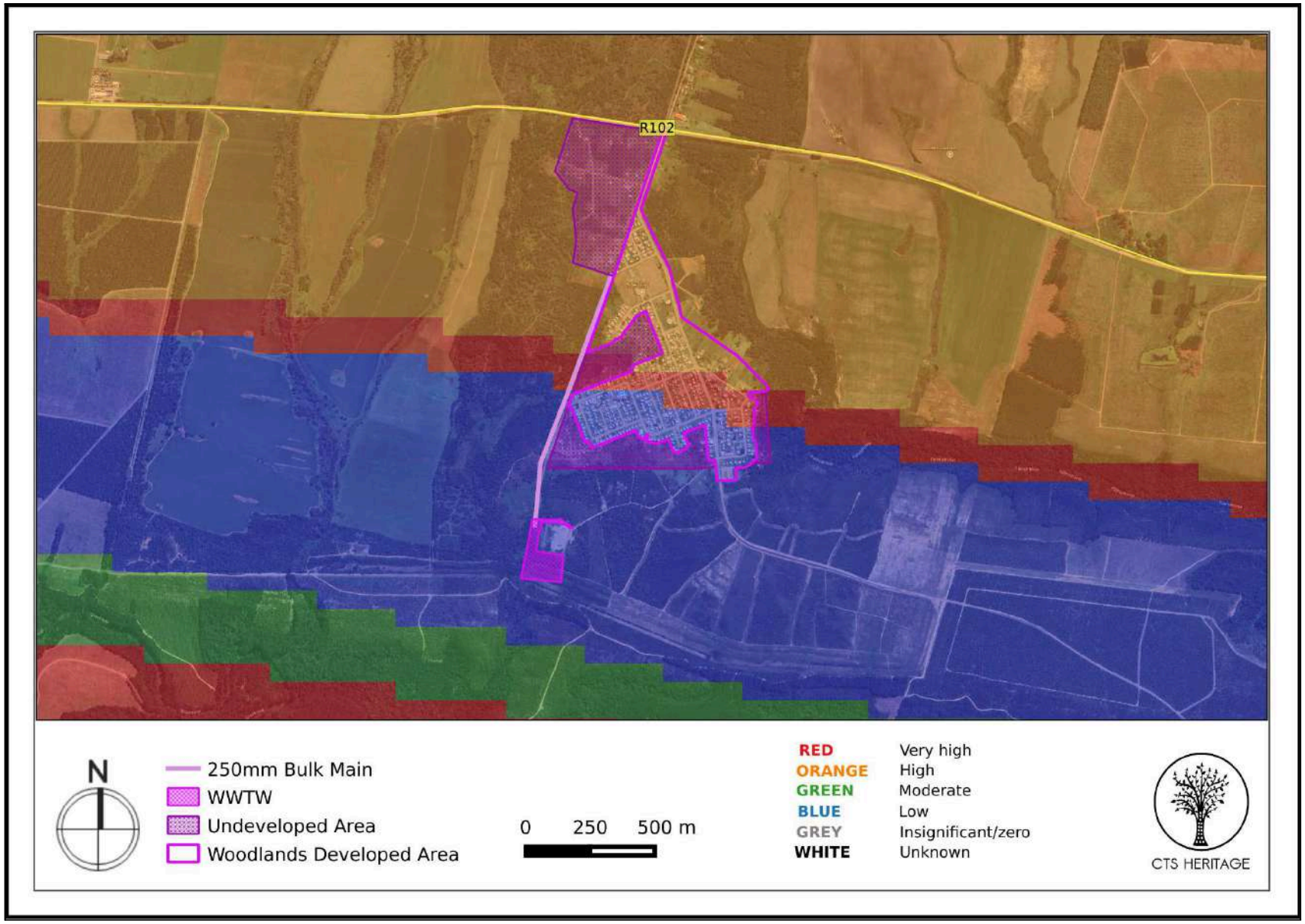

Figure 4. Palaeosensitivity Map. Indicating Low fossil sensitivity underlying the study area. Please See Appendix 3 for a full guide to the legend.

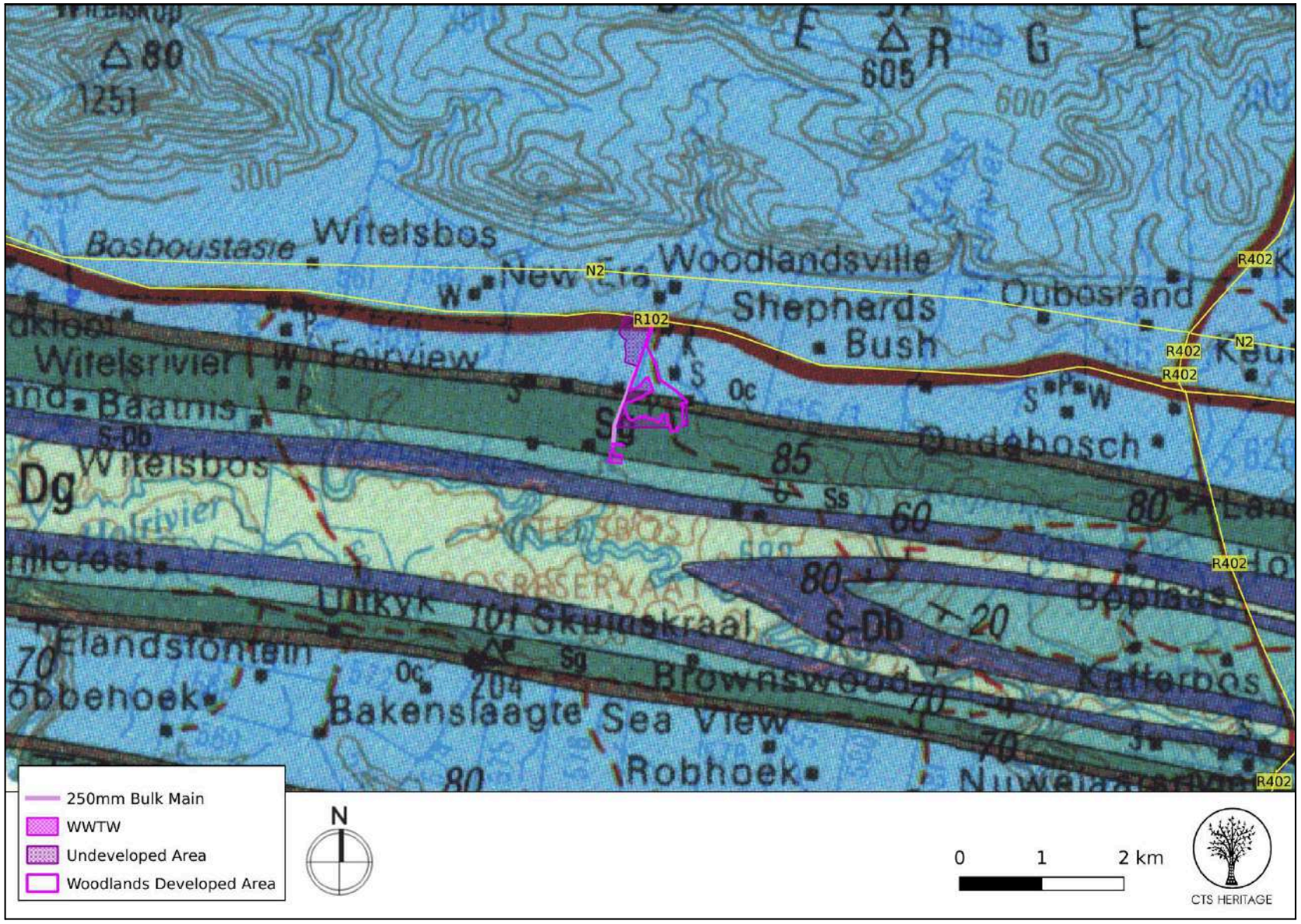

Figure 5. Geology Map. Extract from the CGS 3324 Port Elizabeth Map indicating that the development area is underlain by sediments of the Table Mountain Group Op: Peninsula Formation, Sg: Goudini Formation, Ss: Skurweberg Formation

8. Heritage statement and character of the area

The Kareedouw East WEF is located approximately 13km southwest of Kareedouw on the R62. Kareedouw got its name from the Khoe phrase “path by the Karee trees. It was established in 1906 when the Dutch Reformed Church decided to build a church there, which is still in use. South Africa’s late former Prime Minister, John Vorster is buried next to the Dutch Reformed Church in Kareedouw. It has a long history of wood cutting and has a statue in the town to commemorate the town’s woodcutters. The town still has a large wood and lumber industry, with a creosote plant. It is also known as the gateway to the Langkloof as well as the Southern Entrance to the Baviaanskloof. In 2020 it won the Kwela Town of the Year title. The R62 is one of the more well-known routes in South Africa, boasting natural splendour and many hiking trails.

Cultural Landscape

Cultural Landscape is defined as a symbiosis of human activity and environment. As defined by the World Heritage Committee, it is the "cultural properties [that] represent the combined works of nature and of man" and often encompasses various elements within an area that overlap with each other to create a unique sense of place. Cultural Landscapes include elements of palaeontological, archaeological, built environment and historical significance as well as elements of natural and aesthetic value. These elements are interrogated further below, as they pertain to the area proposed for development.

The broader area, as part of the renowned Garden Route, is known for its scenic value, especially along the R62. The location of this development between two nature reserves speaks further to the scenic and wilderness value of this broader context. Wahl and Van Schalkwyk (2013) note that the R62 and the Langkloof Scenic Routes have high local and regional significance for their aesthetic and economic (tourism) values. Based on the location of the proposed WWTW adjacent to the existing waste disposal site, and its distance from any major access routes, it is unlikely that the proposed development of the WWTW will negatively impact on the cultural landscape value of the area. The proposed sewer reticulation network is to be located within the existing road network for the existing Woodlands residential development. As this network will be buried, it is unlikely that this infrastructure will negatively impact on the cultural landscape.

Archaeology

Nilssen (2018) [SAHRIS ID 513392] in a nearby AIA as part of the Impofu WEF located 30km east of the proposed development area, wrote, “*The most sensitive portion of the Impofu Wind Farms site, from an archaeological and heritage standpoint, is the coastal strip where archaeological resources are abundant up to a distance of about 5 km from the shoreline. This stretch is described as a pre-colonial cultural landscape and is highly valued by scientists and the Gamtkwa Khoisan Council. Due to the scarcity of rock shelters and caves in the study area, archaeological sites are rare further inland and are expected to cluster on higher lying areas overlooking the relatively flat to undulating surroundings. Many finds reported inland of the pre-colonial cultural landscape consist of isolated Stone Age specimens or very low density scatters of Stone Age artefacts that occur in disturbed contexts and devoid of any faunal remains or other cultural materials. For the most part, such heritage resources are rated to be of low significance.”* This proposed development area is located further inland which means that it is located outside of this sensitive coastal band. According to Van Schalkwyk (2013), “Little is known about the Stone Age in the region, especially with regard to the Middle Stone Age and even more so about the Early Stone Age.” However, he goes on to note that rock art and shelters occupied during the Later Stone Age are known from the broader region. Rock art sites and associated archaeological deposit may be located within the kloofs and valleys located within the mountains located north of the area under assessment here.

Few heritage impact assessments have been completed in proximity to the area proposed for development, resulting in some Heritage resources being identified within the broader area, most of which are palaeontological in nature (Figure 3). In their Archaeological Assessment as part of a larger project for a 132 kv line running from Melkhout through Humansdorp and Dieprivier to Kareedouw, Wahl and Van Schalkwyk (2013, SAHRIS ID 120032, and Van Schalkwyk & Wahl, 2012, SAHRIS ID 131946) found very few archaeological artefacts or remains. They also included no mitigation recommendations pertaining to archaeology. They do list some finds from other prior assessments completed by Binneman in the vicinity [SAHRIS IDS 6890 and 162676]. The archaeological sensitivity of the broader area can be summarised as follows, “*ESA stone artefacts are common throughout the region and a large site is present on the hill slopes close to the confluence of the Krom and Diep Rivers, about 3.5 km south-east of Dieprivier*

Substation (Binneman 2010; 2012). Binneman also identified MSA /ESA artefacts about 2.3 km south-east of Dieprivier Substation (Binneman 2010), a single ESA handaxe 2.7 km north-west of proposed Tower 46 (Binneman 2011) and a scatter of ESA artefacts about 8 km south-west of Dieprivier Substation (Binneman 2012)." In Binneman's report, (2011, SAHRIS ID 6890, the large orange polygon in Figure 2) he wrote "The proposed Happy Valley Wind Energy Facility is approximately 20 kilometres from the coast and falls outside the coastal sensitive zone. The site is covered by dense grass and fynbos vegetation, which made archaeological observation very difficult. Only one large Earlier Stone Age handaxe was observed eroding from the exposed gravel in a track leading to the top of the ridge."

The area proposed for development in this application has not been previously been assessed for impacts to archaeological heritage however, due to the location of the proposed WWTW adjacent to the existing waste disposal site, as well as the limited nature and scale of the proposed WWTW, it is unlikely that this proposed development will negatively impact on significant archaeological heritage. The proposed sewer reticulation network is to be located within the existing road network for the existing Woodlands residential development. As such, the establishment of this water infrastructure will be located in areas that have been extensively previously disturbed and as such, it is unlikely that this proposed development will negatively impact on significant archaeological heritage.

Palaeontology

According to the SAHRIS Palaeosensitivity map, the area proposed for development is underlain by sediments of varying levels, from low to very high palaeontological sensitivity. According to the extract from the Council of GeoScience map for Port Elizabeth (3324), the area proposed for the WEF is underlain by sediments of the Peninsula Formation (Op), the Cederberg Formation (Oc), the Goudini Formation (Sg) andthe Skurweberg Formation (Ss).

Almond (2013, SAHRIS ID 131953) in a PIA that intersects with the proposed development (Figure 2. Previous Heritage Impact Assessments), wrote "*Body fossils (shells, teeth, bones etc) are so far unknown from the **Peninsula Formation** but a modest range of shallow marine to nearshore fluvial and / or estuarine trace fossils have been recognised, mainly from the Western Cape outcrop area (e.g. Rust 1967, Potgieter & Oelofsen 1983, Broquet 1990, 1992, Almond 1998a,b, Braddy & Almond 1999, Thamm & Johnson 2006). These traces include trilobite resting and feeding burrows (Cruziana, Rusophycus), arthropod trackways (e.g. Diplichnites, Palmichnium) that are variously attributed to eurypterids, crustaceans or trilobites, palmate, annulated feeding burrows (Arthrophycus), dense assemblages ("pipe rock") of vertical dwelling burrows of unknown suspension feeders (Skolithos, Trichichnus), vertical columns or cones of densely reworked sediment (Metaichna / possible Heimdallia), and several types of horizontal burrows (Palaeophycus, possible Aulichnites)…An important, albeit low diversity, assemblage of Peninsula Formation trace fossils was recently recorded from heterlithic beds exposed in the Rosenhof Quarry site within the broader Tsitsikamma Community Wind Energy Facility study region to the southwest of Humansdorp by Almond (2012). Traces here include vertical Skolithos burrows, Rusophycus and Cruziana arthropod scratch burrows that were probably generated by trilobites, possible bivalve burrows (Lockeia) and teichichnoid spreiten burrows, as well as abundant flower-shaped "gyrophyllitid" burrows that had previously been reported from beach boulders at Cape Saint Francis."* In the Palaeotechnical report on formations in the Eastern Cape (2009, SAHRIS ID 108744), the Peninsula Formation has low palaeontological sensitivity.

On the Cederberg Formation, Almond (2013) writes "*An exceptionally important and interesting biota of soft-bodied (i.e. unmineralised) and shelly invertebrates, primitive jawless vertebrates and microfossils has been recorded since the middle 1970s from finely laminated, black mudrocks of the Soom Member, forming the lower, mudrock dominated portion of the **Cederberg Formation**. This is one of only two so-called soft-body Lagerstaette of Late Ordovician age recorded worldwide (the other example was recently discovered in Canada; Young et al., 2007). The "Soom Shale" is between 10-15m thick, and fossils occur sporadically throughout the succession, from 1m above the base upwards. This biota has been extensively reviewed by Aldridge et al. (1994, 2001) and Selden and Nudds (2004) while much new information remains to be published (See review in Almond 2008 and refs. therein). The macrofossils include a range of macroalgae, shelly invertebrates (e.g. inarticulate brachiopods, conical-shelled nautiloids and other molluscs, crustaceans, unmineralised trilobites and eurypterids or "water scorpions") and several groups of primitive jawless fish (e.g. anaspids, conodonts). Important microfossil groups include chitinozoans, spore tetrads of land plants and marine acritarchs. A further interesting category of fossils recorded from the Soom*

Member of Kromrivier are bromalites. These are the various fossilised products of ancient animal guts such as droppings (coprolites), regurgitates and stomach contents that sometimes contain the comminuted remains of recognisable prey animals such as conodonts or brachiopods (Aldridge et al., 2006). The majority of Soom fossils have been collected from a handful of localities, most of which lie on the Clanwilliam sheet within the central to northern Cedarberg (Gray et al. 1986, Cocks & Fortey 1986, Theron et al. 1990, Aldridge et al. 1995). New fossiliferous localities have recently been identified in the Clanwilliam area, while well preserved trilobite trace fossils (Rusophycus) have been collected from thin tempestite sandstones towards the base of the Soom Member in the Hex River Mountains by Almond (unpublished obs., 2011)." In the Palaeotechnical report (2009) the Cederberg Formation recommendation is "field scoping study recommended before excavation takes place" followed by "This unit often obscured by Cape age deformation and poor exposure of mudrocks in mountainous terrain. Its development in the Eastern Cape is not well understood." It is determined to have high sensitivity for impacts to palaeontology.

Almond (2013) summarises the next two formations in the Table Mountain group as "*The fossil record of the **Goudini** and **Skurweberg Formations**, dominated by braided fluvial sandstones, is very sparse indeed. This reflects major global regression (low sea levels) during the Silurian Period, peaking during the latter part of the period (Cooper 1986). Sporadic, low diversity ichnoassemblages from thin, marine-influenced stratigraphic intervals have been recorded from all three Nardouw formations in the Western Cape by Rust (1967a, 1981) and Marchant (1974). There are also scattered, often vague reports of trace fossils in geological sheet explanations and SACS reports (e.g. Malan et al. 1989, De Beer et al. 2002). Most involve "pipe rock" (Skolithos ichnofacies) or various forms of horizontal epichnial burrows, including possible members of the Scolicia group which may be attributable to gastropods. Also recorded are typical Early Silurian palmate forms of the annulated burrow Arthrophycus, poorly preserved "bilobites" (bilobed arthropod scratch burrows), gently curved epichnial furrows and possible arthropod tracks (Almond 2008). It is possible that more diverse ichnoassemblages (and even microfossils from subordinate mudrock facies where these have not been deeply weathered or tectonised) may eventually be recorded from the more marine-influenced outcrops of the Eastern Cape Fold Belt."* In the Palaeotechnical report (2009, SAHRIS ID 108744), both the Goudini and Skurweberg Formation have low palaeontological sensitivity.

On the Table Mountain Group formations in the area Almond (2013) surveyed, he wrote "*During the present one-day field study almost all the Table Mountain Group exposures showed high levels of tectonic deformation (e.g. steep bedding, quartz veins, pervasive cleavage within mudrock intervals) as well as deep chemical weathering. These two factors, which are both more extremely developed within the potentially more fossiliferous mudrock-rich intervals of the Table Mountain Group (e.g. Cederberg, Goudini and Baviaanskloof Formation), have seriously compromised fossil preservation here. No fossil remains were observed within the Table Mountain Group sediments in the study area and the various formations concerned are considered to have a low palaeontological sensitivity in this region."*

Based on Almond et al. (2009) and Almond (2013), a field survey is usually recommended for geology that has high and very high palaeontological sensitivity, but due to tectonic deformations, the fossil finds may be limited. In the HIA by Van Schalkwyk and Wahl (2012, SAHRIS ID 131946), the palaeontological sensitivity of the area is summarised it as "underlain by potentially fossiliferous bedrocks of Palaeozoic, Mesozoic and Caenozoic age that crop out within the Cape Fold Belt, Southern coastal plain and Gamtoos River Valley of the Eastern Cape. The Dieprivier-Kareedouw sector runs along the grain of the Cape Fold Belt and is partially underlain by Early Devonian sediments of the Baviaanskloof and Gydo Formations that may contain early land plants and marine invertebrates respectively. However, given the tight folding here, it is quite likely that most of the original fossil content of these rocks has been destroyed by tectonism."

The area proposed for development in this application has not been previously been assessed for impacts to palaeontological heritage however, due to the limited nature and scale of the proposed WWTW, it is unlikely that this proposed development will negatively impact on significant archaeological heritage. The proposed sewer reticulation network is to be located within the existing road network for the existing Woodlands residential development. As such, the establishment of this water infrastructure will be located in areas that have been extensively previously disturbed and as such, it is unlikely that this proposed development will negatively impact on significant palaeontological heritage

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RECOMMENDATIONS
Based on the information available, and the limited nature and scale of the proposed development, it is unlikely that significant heritage resources will be impacted by the proposed development and no further heritage studies are recommended in terms of section 38(3) of the NHRA.

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APPENDIX 1

List of heritage resources within close proximity to the development area from SAHRIS

Site ID	Site no	Full Site Name	Site Type	Grading
28471	9/2/044/0003	Klasies River Caves, Humansdorp District	Archaeological	Grade I
28467	9/2/044/0006	Moravian Mission Complex, Clarkson, Humansdorp District	Building	Grade II
28468	9/2/044/0006-001	Church, Moravian Mission Complex, Clarkson, Humansdorp District	Building	Grade II
28469	9/2/044/0006-002	Parsonage, Moravian Mission Complex, Clarkson, Humansdorp District	Building	Grade II
28459	9/2/044/0006-003	School, Moravian Mission Complex, Clarkson, Humansdorp District	Building	
28460	9/2/044/0006-004	Church offices, Moravian Mission Complex, Clarkson, Humansdorp District	Building	Grade II
28461	9/2/044/0006-005	Mission store, Moravian Mission Complex, Clarkson, Humansdorp District	Building	Grade II
28462	9/2/044/0006-006	Cemetery, Moravian Mission Complex, Clarkson, Humansdorp District	Burial Grounds & Graves	Grade II
28463	9/2/044/0006-007	Memorial to Pastor Nauhaus, Moravian Mission Complex, Clarkson, Humansdorp District	Monuments & Memorials	Grade II
28464	9/2/044/0006-008	Church bell, Moravian Mission Complex, Clarkson, Humansdorp District	Building	Grade II
669	SHIPWRECKID454	Mary	Shipwreck	
2223	SHIPWRECKID2018	Evdokia	Shipwreck	
84427	TSITSI002	Tsitsikamma Borrow Pits 002	Structures	Grade IIIc

88098	KAREED001	KAREEDOUW-DIEPRIVIER 001	Transport infrastructure	Ungraded
88099	KAREED002	KAREEDOUW-DIEPRIVIER 002	Transport infrastructure	Ungraded
88100	KAREED003	KAREEDOUW-DIEPRIVIER 003	Transport infrastructure	Ungraded
88101	KAREED004	KAREEDOUW-DIEPRIVIER 004	Transport infrastructure	Ungraded
88102	KAREED005	KAREEDOUW-DIEPRIVIER 005	Transport infrastructure	Ungraded
88103	KAREED006	KAREEDOUW-DIEPRIVIER 006	Transport infrastructure	Ungraded
88104	KAREED007	KAREEDOUW-DIEPRIVIER 007	Transport infrastructure	Ungraded
88105	KAREED008	KAREEDOUW-DIEPRIVIER 008	Transport infrastructure	Ungraded
88106	KAREED009	KAREEDOUW-DIEPRIVIER 009	Transport infrastructure	Ungraded
88107	KAREED010	KAREEDOUW-DIEPRIVIER 010	Transport infrastructure	Ungraded
88126	KAREED011	KAREEDOUW-DIEPRIVIER 011	Deposit	Ungraded
88127	KAREED012	KAREEDOUW-DIEPRIVIER 012	Archaeological	Grade IV
88128	KAREED013	KAREEDOUW-DIEPRIVIER 013	Transport infrastructure	Ungraded
88129	KAREED014	KAREEDOUW-DIEPRIVIER 014	Archaeological	Ungraded
88130	KAREED015	KAREEDOUW-DIEPRIVIER 015	Archaeological	Ungraded
88131	KAREED016	KAREEDOUW-DIEPRIVIER 016	Transport infrastructure	Ungraded
88132	KAREED017	KAREEDOUW-DIEPRIVIER 017	Transport infrastructure	Ungraded
88133	KAREED018	KAREEDOUW-DIEPRIVIER 018	Transport infrastructure	Ungraded
88134	KAREED019	KAREEDOUW-DIEPRIVIER 019	Archaeological	Ungraded

88135	KAREED020	KAREEDOUW-DIEPRIVIER 020	Transport infrastructure	Ungraded
88156	KAREED021	KAREEDOUW-DIEPRIVIER 021	Archaeological	
107983	Klasies River Mouth Caves 1/1A		Archaeological	
108202	KLPDRF 01	Klipdrif Oos 01	Artefacts	Grade IIIc
108203	KLPDRF 02	Klipdrif Oos 02	Artefacts	Grade IIIb
127256	KLPDRF 03	Klipdrif Oos 03	Artefacts	Grade IIIc
127257	KLPDRF 04	Klipdrif Oos 04	Artefacts	Grade IIIc
127258	KLPDRF 05	Klipdrif Oos 05	Artefacts	Grade IIIc
131995	3424BB/ Renewable energy/ Cape St Francis/ site 1	Stona Age tools	Archaeological	Ungraded
138200	KRMC	Klasies River Mouth Caves	Archaeological	

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APPENDIX 2

Reference List from SAHRIS

NID	Type	Author(s)	Date	Title
4255	HIA Letter of Exemption	Johan Binneman	01/06/2006	Letter Of Recommendation (With Conditions) For The Exemption Of A Full Phase 1 Archaeological Heritage Impact Assessment For The Subdivision And Rezoning Of Portion 28 Of The Farm "Melkhoutekraal" No. 254 In Kareedouw (Koukama Municipality), From Agriculture
6890	AIA Phase 1	Johan Binneman	04/06/2011	A Phase 1 Archaeological Impact Assessment For The Proposed Happy Valley Wind Energy Facility Near Humansdorp, Kouga Local Municipality, District Of Humansdorp, Eastern Cape Province
6891	AIA Desktop	Johan Binneman	01/06/2009	An Archaeological Desktop Study For The Proposed Happy Valley Wind Energy Facility. Kou-Kamma Municipality, Humansdorp District, Eastern Cape Province
7124	AIA Phase 1	Karen Van Ryneveld	20/09/2010	Establishment Of A Commercial Wind Farm, Kouga Local Municipality, Eastern Cape, South Africa
7594	AIA Phase 1	Johan Binneman	01/08/2011	Phase 1 Archaeological Impact Assessment For The Proposed Oyster Bay Wind Energy Facility, Kouga Local Municipality, Humansdorp, Eastern Cape Province
7595	AIA Desktop	Johan Binneman	01/11/2010	An Archaeological Desktop Study For The Proposed Oyster Bay Wind Energy Facility, Local Kuga Municipality, Humansdorp District, Eastern Cape Province
8101	AIA Desktop	Johan Binneman	07/03/2011	An Archaeological Desktop Study For He Construction Of The Proposed Tsitsikamma Community Wind Energy Facility, Kouga Local Municipality, Humansdorp District, Eastern Cape Province
8102	AIA Phase 1	Johan Binneman	01/08/2011	A Phase 1 Archaeological Impact Assessment For The Proposed Tsitsikamma Community Wind Energy Facility, Kouga Local Municipality, Humansdorp District, Eastern Cape Province.
8445	HIA Phase 1	Karen Van Ryneveld	31/12/2010	Establishment Of A Commercial Wind Farm, Kouga Local Municipality, Eastern Cape, South Africa 1
8446	HIA Phase 1	Karen Van Ryneveld	31/12/2010	Establishment Of A Commercial Wind Farm, Kouga Local Municipality, Eastern Cape, South Africa

8914	PIA Phase 1	Robert Gess	30/03/2011	Palaeontological Heritage Component Of Fibreco Telecommunications, Basic Assessment For The Proposed Fibre Optic Data Cable Project: Route 5: Pe To Durban
8929	PIA Phase 1	Billy De Klerk	04/01/2011	Palaeontological Heritage Impact Assessment Of The Proposed Happy Valley Wind Energy Facility On A Site East Of Humansdorp, Eastern Cape
8955	PIA Phase 1	Billy De Klerk	17/12/2010	Palaeontological Heritage Impact Assessment Of The Proposed Wind Farms In The Coastal Region Of The Kouga Local Municipality Near The Villages Of Oyster Bay And St Francis Bay.
8988	PIA Phase 1	John E Almond	20/09/2011	Proposed Oyster Bay Wind Energy Facility Near Humansdorp. Kouga Local Municipality, Eastern Cape
9033	PIA Phase 1	John E Almond	02/08/2011	Proposed Tsitsikamma Community Wind Energy Facility Near Humansdorp, Kouga Local Municipality, Eastern Cape Province
26808	AIA Phase 2	Karen Van Ryneveld	03/06/2012	Phase 1 Archaeological Assessment Micro-Siting & Phase 2 Archaeological Test Pitting Turbine Line 33-36, Red Cap Kouga Wind Farm, Central Cluster, Oyster Bay, Eastern Cape, South Africa
44916	AIA Phase 1	Karen Van Ryneveld	25/06/2012	Mining Right Application: Farms Klein Rivier (713-32) And Buffelsbosch (742-14), Humansdorp District, Eastern Cape, South Africa
44918	PIA Desktop	John Pether	05/06/2012	Mining Right Application On Farms Klein Rivier 713 Ptn 32 And Buffelsbosch 742 Ptn 14 District Of Humansdorp, Eastern Cape Province
120032	AIA Phase 1	Elizabeth Wahl, Len van Schalkwyk	08/05/2013	Phase 1 Archaeological Impact Assessment Report: Proposed 132kV Power Line and Substation Infrastructure, Melkhout-Dieprivier, Kouga Local Municipality, Cacadu District, Eastern Cape Province, South Africa
108744	Palaeotechnical Report	John E Almond, Billy De Klerk, Robert Gess	01/05/2009	Palaeontological heritage of the Eastern Cape
125085	AIA Phase 1	Karen Van Ryneveld	15/07/2013	Tsitsikamma Wind Farm - Borrow Pits Project, Humansdorp Registration Division, Eastern Cape
125089	PIA Phase 1	Karen Van Ryneveld	17/07/2013	Palaeontological Heritage Study For Proposed Establishment Of Borrow Pits (For Road And Concrete Construction Materials) To Primarily Serve The Tsitsikamma Community Wind Farm Project

131946	AIA Desktop	Len van Schalkwyk, Elizabeth Wahl	30/05/2012	Phase 1 Heritage Impact Assessment Report: 132kV Power Line and Substation Infrastructure, Dieprivier-Kareedouw, Kouga Local Municipality, Cacadu District Municipality, Eastern Cape Province, South Africa
131953	PIA Phase 1	John E Almond	01/05/2013	Palaeontological specialist assessment: combined field-based and desktop study PROPOSED KAREEDOUW-DIEPRIVIER 132 kV TRANSMISSION LINE PROJECT, HUMANSDORP MAGISTERIAL DISTRICT, EASTERN CAPE.
162676	HIA Phase 1	Johan Binneman	31/10/2012	A Phase 1 Archaeological Impact Assessment For The Proposed 132kv Power Line Linking The Tstisikamma Community Wind Energy Facility To The Proposed Extension Of The Dieprivier Substation, Kouga Local Municipality, Humansdorp District, Eastern Cape Province
177466	AIA Phase 2	Karen Van Ryneveld	01/10/2014	Phase 2a Archaeological Monitoring (Final Report) - The Kouga Wind Farm (Red Cap Kouga Wind Farm, Central Cluster), Oyster Bay, Eastern Cape, South Africa
179415	Palaeontological Specialist Reports	John E Almond	31/08/2012	Palaeontological Specialist Study: Combined Desktop & Field-Based Assessment For The Proposed Tsitsikamma Community Wind Energy Facility Near Humansdorp, Kouga Local Municipality, Eastern Cape Province
179470	Archaeological Specialist Reports	Johan Binneman	28/09/2012	Archaeological Walk Through Survey Of The Final Turbine Footprint For The Proposed Tsitsikamma Community Wind Energy Facility, Kouga Local Municipality
269397	AIA Phase 1	Celeste Booth	02/03/2015	Fibreco Repeater Sites Routes 3 And 4_heritage_2015 Aia Report
384447	Heritage Statement	Stefan de Kock	09/01/2017	Proposed Establishment Of A New Dam On A Portion Of The Farm Rietfontein 594/1, Sarah Baartman District And Nelson Mandela Bay Municipality
513392	**AIA Phase 1**	**Peter Nilssen**	**02/07/2018**	**Phase 1a Archaeological Impact Assessment, Scoping Phase, Proposed Impofu West Wind Farm, Kouga Local Municipality, Sarah Baartman District Municipality, Eastern 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 (National)
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 (National)
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.

CTS HERITAGE

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 PALAEONTOLOGICAL 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:

- 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.

Project Consultant:	Bluepebble Sustainable Solutions		
Contact person:	**Joclyn Marshall**		
Postal address:			
		Cell:	
Postal code:			
Telephone:		Fax:	
E-mail:	joclyn@bluepebble.co.za>		

4.2 The SPECIALIST

I, Jenna Lavin , declare that –

General declaration:

- I act as the independent Specialist in this application
- I will perform the work relating to the application in an objective manner, even if this results in views and findings that are not favourable to the applicant
- I declare that there are no circumstances that may compromise my objectivity in performing such work;
- I have expertise in conducting environmental impact assessments, including knowledge of the Act, regulations and any guidelines that have relevance to the proposed activity;
- I will comply with the Act, regulations and all other applicable legislation;
- I will take into account, to the extent possible, the matters listed in regulation **8** of the regulations when preparing the application and any report relating to the application;
- I have no, and will not engage in, conflicting interests in the undertaking of the activity;
- I undertake to disclose to the applicant and the competent authority all material information in my possession that reasonably has or may have the potential of influencing - any decision to be taken with respect to the application by the competent authority; and - the objectivity of any report, plan or document to be prepared by myself for submission to the competent authority;
- I will ensure that information containing all relevant facts in respect of the application is distributed or made available to interested and affected parties and the public and that participation by interested and affected parties is facilitated in such a manner that all interested and affected parties will be provided with a reasonable opportunity to participate and to provide comments on documents that are produced to support the application;
- I will ensure that the comments of all interested and affected parties are considered and recorded in reports that are submitted to the competent authority in respect of the application, provided that comments that are made by

Province of the
EASTERN CAPE
ECONOMIC DEVELOPMENT, ENVIRONMENTAL AFFAIRS & TOURISM

DETAILS OF SPECIALIST AND DECLARATION OF INTEREST IN TERMS OF REGULATIONS 12 AND 13 OF THE AMENDMENTS TO THE ENVIRONMENTAL IMPACT ASSESSMENT REGULATIONS, 2014 AS AMENDED.

	(For official use only)
File Reference Number:	
NEAS Reference Number:	
Date Received:	

Application for environmental authorization in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998), as amended and the Amendments to the Environmental Impact Assessment Regulations, 2014. This form is valid as of 6 January 2021.

PROJECT TITLE

UPGRADE OF A WASTEWATER TREATMENT WORKS AND INSTALLATION OF SMALL-BORE SEWAGE RETICULATION SYSTEM IN WOODLANDS, KOUKAMMA LOCAL MUNICIPALITY, SARAH BAARTMAN DISTRICT MUNICIPALITY , EASTERN CAPE

SPECIALIST [1]	CTS Heritage		
Contact person:	Jenna Lavin		
Postal address:	238 Queens Road, Simons Town		
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Telephone:	NA	Fax:	NA
E-mail:	jenna.lavin@ctsheritage.com		
Professional affiliation(s) (if any)	ASAPA, APHP, ICOMOS SA		

[1]

interested and affected parties in respect of a final report that will be submitted to the competent authority may attached to the report without further amendment to the report;

- I will keep a register of all interested and affected parties that participated in a public participation process; and
- I will provide the competent authority with access to all information at my disposal regarding the application, whethe such information is favourable to the applicant or not
- all the particulars furnished by me in this form are true and correct;
- will perform all other obligations as expected from an environmental assessment practitioner in terms of the Regulations; and
- I realise that a false declaration is an offence and is punishable in terms of section 24F of the Act.

Disclosure of Vested Interest (delete whichever is not applicable)

- I do not have and will not have any vested interest (either business, financial, personal or other) in the proposed activity proceeding other than remuneration for work performed in terms of the Amendments to Environmental In Assessment Regulations, 2014 as amended.

Signature of the specialist:

CTS Heritage

Name of company:

27 AUGUST 2025

Date:

SUID-AFRIKAANSE POLISIEDIENS
COMMUNITY SERVICE CENTRE
MUIZENBERG
27 AUG 2025
COMMUNITY SERVICE CENTRE
MUIZENBERG
SOUTH AFRICAN POLICE SERVICE

Signature of the Commissioner of Oaths:

711834-1

Date:

27 August 2025

Designation:

[1] Curriculum Vitae (CV) attached

Official stamp (below).