

HERITAGE IMPACT ASSESSMENT:
PROPOSED URBAN DEVELOPMENT ON A PORTION OF
THE REMAINDER OF ERF 21 AND ERF 266 AND ASSOCIATED
SERVICES, RIVERSDALE, RIVERSDALE MAGISTERIAL DISTRICT,
WESTERN CAPE

Required under Section 38(8) of the National Heritage Resources Act (No. 25 of 1999)

HWC Case No.: HWC22111614NK1118

Report for:

Sharples Environmental Services

P.O. Box 443, Milnerton, 7435

Email: madeleine@sesc.net

On behalf of:

Belladonna (Pty) Ltd



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1st draft: 05 August 2024

2nd draft: 12 August 2024

Final report: 19 June 2025

SUMMARY

1. Site Name

n/a

2. Location

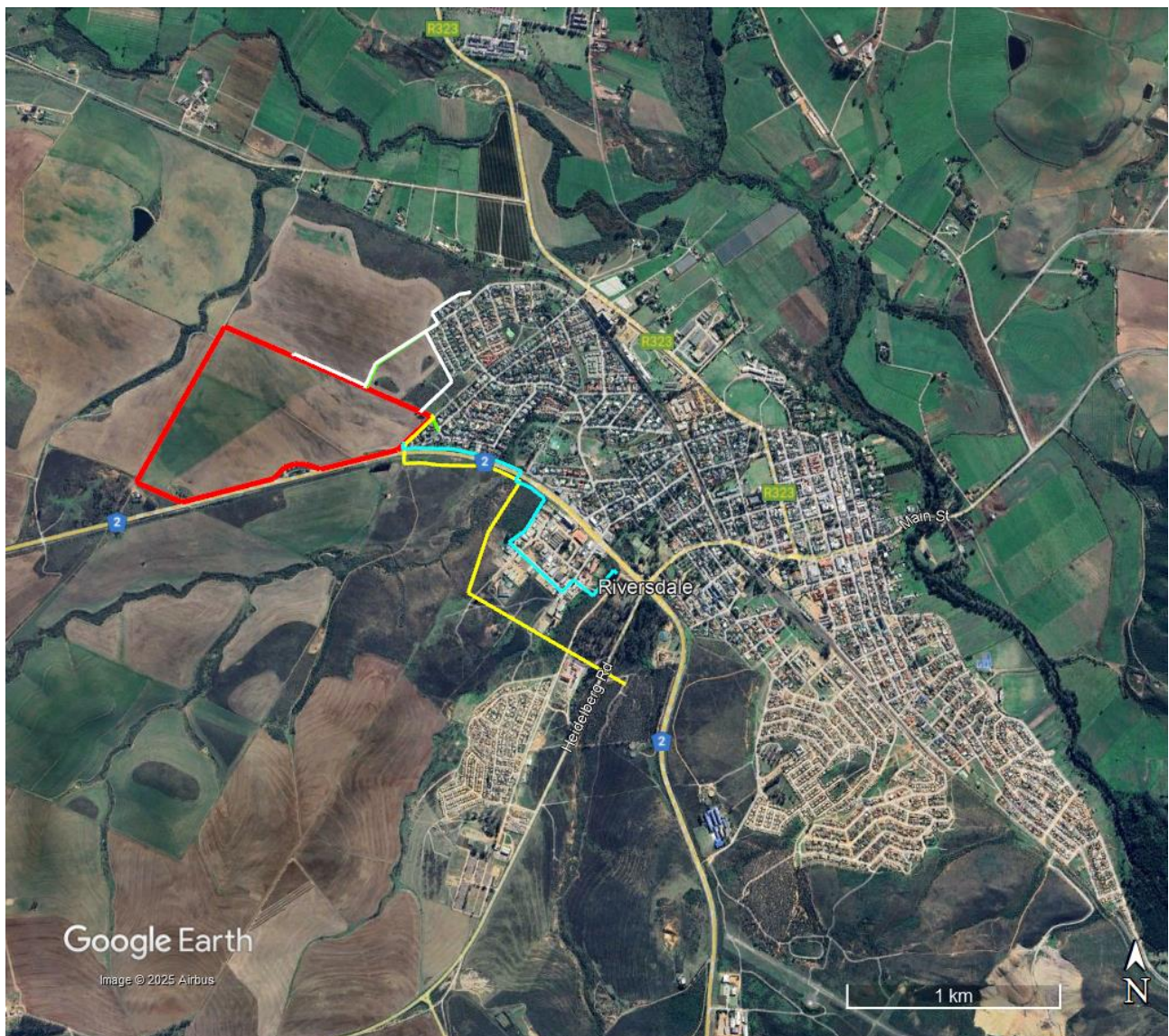
Off N2 and

Remainder of erf 21 and erf 266 for urban development

Erf 14, remainder of erf 22, remainder of erf 214, remainder of erf 2015, erf 4485 (street parcel), remainder of erf 4485 for external associated infrastructure

Centre point at S34° 05' 10.7" E21° 13' 57.4".

3. Locality Plan



Red = urban development, yellow = powerline, turquoise = water pipeline, green = sewage pipeline, white = stormwater pipeline

4. Description of Proposed Development

The Proponent wishes to subdivide, rezone and develop the remainder of erf 21 and erf 266 as a residential development comprising several different residential offerings (Figure 3). The Hessequa Municipality has recently issued a decision to include this site within the urban edge due to increased demand for residential opportunities within Riversdale.

The proposed mixed-use residential development will take place on Erf 266 and a portion of the remainder of Erf 21 which is located immediately north of the N2 on the western outskirts of the town of Riversdale. The remaining portion of Erf 21 to the south of the N2 will not be developed and will remain under Agricultural zoning. New electrical, water and sewage connections will be needed and these will run off site through adjacent and nearby erven (remainder of Farm 22, erf 4485, remainder of erf 4485, erf 14, erf 4084, remainder of erf 2015, and remainder of erf 2080).

The preferred site development plan comprises the development of the following (proportion of the total site and colour on Figure 3 are indicated in parentheses):

- 27 Agricultural Zone II offerings comprising 27.5ha (48.8%; mottled green)
- 159 Single Residential Zone 1 erven comprising 10.4ha (18.4%; yellow)
- 3 Pockets of General Residential Zone II offerings for a total of 10.4ha (18.4%; orange)
- 1 Business Zone III of 0.7ha (1.2%; blue); and
- 3 Open Space Zone 1 erf comprising 1.5ha (2.7%; green).

Additionally, several ancillary land uses are also proposed which include the internal and access roads as follows:

- 7 Transport Zone II stands, comprising 3.8ha (6.7%; brown);
- 1 Transport Zone III stand, comprising 1.9ha (3.4%; grey); and
- 1 Utility Zone, comprising 0.2ha (0.4%; red).



The total development footprint comprises approximately 56.4ha. It is furthermore noted that the General Residential Zone II sites will be further subdivided with roads and erven and will include communal private open spaces.

5. Heritage Resources Identified

Archaeological material in the form of Early Stone Age artefacts is present, but this aspect could not be well-evaluated due to the density of vegetation (wheat) on the site at the time of the assessment. Even with fairly dense scatters present, the significance of such material would be low and mitigation be easily implemented.

The landscape is identified as a cultural landscape of at least medium significance and the N2 which passes through this landscape and is adjacent to the site is similarly significant. Garcia Pass along the R323 to the north is dated as Grade II, but the historically significant section is located far to the north. Riverdale town has been severely changed by insensitive development over the years and the townscape is of no particular cultural significance.

6. Anticipated Impacts on Heritage Resources

Archaeological materials would be damaged or destroyed by development.

The landscape would be visually altered through the expansion of the town of Riversdale. However, extensive interaction between the developer and heritage and visual consultants has resulted in meaningful revisions to the layout which address the visual concerns. Remaining issues are smaller and can be addressed through appropriate mitigation measures.

7. Recommendations

It is recommended that the proposed development be authorised, but subject to the following recommendations which should be included as conditions of authorisation:

- The HWC Fossil Chance Finds Procedure must be included in the EMPr;
- An archaeologist must be contracted to survey the urban development site and all associated services footprints during the dry season when no wheat is growing to record and/or collect artefacts as deemed appropriate. This must be done under an approved Workplan;
- An architectural design guideline manual must be developed, approved by HWC, and implemented. This must address main buildings, outbuildings and fencing for each development type and should aim to prohibit inappropriate architectural elements and create a degree of unity while allowing enough variability to allow unique designs;
- A landscape Plan must be developed, approved by HWC, and implemented. This should focus mainly on perimeter and street planting with a view towards softening the development's appearance in the rural landscape;
- Tree-planting should commence as early as possible during the construction phase;
- Visually permeable fencing must be implemented as far as possible, but especially along the N2 with vegetation used for privacy screening;
- Outdoor lighting must be designed to minimise light spillage; and
- If any archaeological material or human burials are uncovered during the course of development then work in the immediate area should be halted. The find would need to be reported to the heritage authorities and may require inspection by an archaeologist. Such heritage is the property of the state and may require excavation and curation in an approved institution.

8. **Author/s and Date**

Heritage Impact Assessment: Jayson Orton, ASHA Consulting (Pty) Ltd, 12 August 2024

Visual Impact Assessment: FC Holm, July 2024

Glossary

Acheulean: An archaeological name for the period comprising the later part of the Early Stone Age. This period started about 1.7-1.5 million years ago and ended about 250-200 thousand years ago.

Background scatter: Artefacts whose spatial position is conditioned more by natural forces than by human agency.

Core: a stone from which other pieces (flakes and blades) have been intentionally removed.

Early Stone Age: Period of the Stone Age extending approximately between 2 million and 200 000 years ago.

Flake: a piece of stone intentionally removed from a core. Flakes are identifiable by certain features related to the point at which the core was struck.

Handaxe: A bifacially flaked, pointed stone tool type typical of the Early Stone Age Acheulian Industry. It is also referred to as a large cutting tool.

Holocene: The geological period spanning the last approximately 10-12 000 years.

Hominid: a group consisting of all modern and extinct great apes (i.e. gorillas, chimpanzees, orangutans and humans) and their ancestors.

Later Stone Age: Period of the Stone Age extending over the last approximately 20 000 years.

Middle Stone Age: Period of the Stone Age extending approximately between 200 000 and 20 000 years ago.

Pleistocene: The geological period beginning approximately 2.5 million years ago and preceding the Holocene.

Abbreviations

APHP: Association of Professional Heritage Practitioners

ASAPA: Association of Southern African Professional Archaeologists

BA: Basic Assessment

CRM: Cultural Resources Management

DEA&DP: Department of Environmental Affairs and Development Planning

EA: Environmental Authorisation

ECO: Environmental Control Officer

EMPr: Environmental Management Program

ESA: Early Stone Age

GPS: global positioning system

HIA: Heritage Impact Assessment

HWC: Heritage Western Cape

LSA: Later Stone Age

MSA: Middle Stone Age

NCW: Not Conservation Worthy

NEMA: National Environmental Management Act (No. 107 of 1998)

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

NID: Notification of Intent to Develop

PHS: Provincial Heritage Site

PPP: Public Participation Process

SAHRA: South African Heritage Resources Agency

SAHRIS: South African Heritage Resources Information System

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1. INTRODUCTION

ASHA Consulting (Pty) Ltd was appointed by Sharples Environmental Services to conduct an assessment of the potential impacts to heritage resources that might occur through the proposed residential development on a portion of the Remainder of erf 21 and erf 266 (Figure 1). Note that the Remainder of erf 21 spans the N2 and only the northern portion will be included in the development (Figure 2). New services on adjoining and nearby erven will also be required. These are Erf 14, remainder of erf 214, remainder of erf 214, remainder of erf 2015, erf 4485 (street parcel), remainder of erf 4485. A centre point for the proposed project is at S34° 05' 10.7" E21° 13' 57.4".

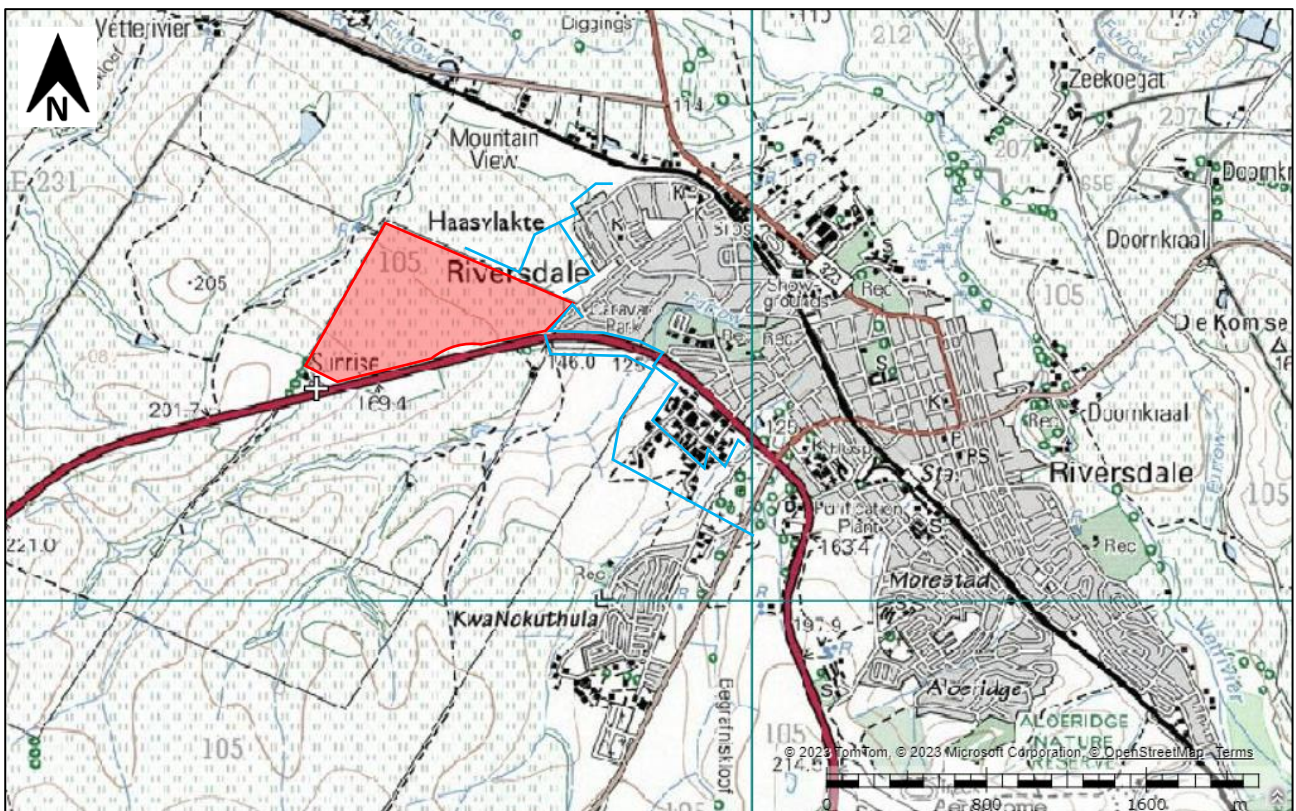


Figure 1: Extract from 1:50 000 topographic maps 3421AA and 3421AB showing the location of the site. Red polygon = urban development, turquoise = services (see Figure 2 for further details). Source of basemap: Chief Directorate: National Geo-Spatial Information. Website: www.ngi.gov.za.

Importantly, the subject properties and the remainder of erf 22 located to their north have all been recently incorporated within the urban edge of Riversdale¹.

¹ Letter from Hessequa Municipality to PlanServ dated 3 June 2021.



Figure 2: Aerial view showing the site in local context. The larger red polygon is the portion of the Remainder of erf 21 that will be developed and the smaller is erf 266. The green polygon to the south of the N2 is the portion of the Remainder of erf 21 that will not be developed. White lines = storm water, bright green = sewage pipeline, turquoise = water pipeline, yellow = powerline.

1.1. The proposed project

1.1.1. Project description

The Proponent wishes to subdivide, rezone and develop the remainder of erf 21 and erf 266 as a residential development comprising several different residential offerings (Figure 3). The Hessequa Municipality has recently issued a decision to include this site within the urban edge due to increased demand for residential opportunities within Riversdale.

The proposed mixed-use residential development will take place on Erf 266 and a portion of the remainder of Erf 21 which is located immediately north of the N2 on the western outskirts of the town of Riversdale. The remaining portion of Erf 21 to the south of the N2 will not be developed and will remain under Agricultural zoning. New electrical, water and sewage connections will be needed and these will run off site through adjacent erven (remainder of Farm 22, erf 4485, remainder of erf 4485, erf 14, erf 4084, remainder of erf 2015, and remainder of erf 2080). The powerline will be underground from the development site up to the point where it reaches the southern edge of the N2 road reserve. Thereafter it will be an overhead line

The preferred site development plan (Figure 3) comprises the development of the following (proportion of the total site and colour on Figure 3 are indicated in parentheses):

- 27 Agricultural Zone II offerings comprising 27.5ha (48.8%; mottled green)
- 159 Single Residential Zone 1 erven comprising 10.4ha (18.4%; yellow)
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Additionally, several ancillary land uses are also proposed which include the internal and access roads as follows:

- 7 Transport Zone II stands, comprising 3.8ha (6.7%; brown);
- 1 Transport Zone III stand, comprising 1.9ha (3.4%; grey); and
- 1 Utility Zone, comprising 0.2ha (0.4%; red).

The total development footprint comprises approximately 56.4ha. It is furthermore noted that the General Residential Zone II sites will be further subdivided with roads and erven and will include communal private open spaces.

All civil services required to service the proposed development are readily available towards the north and eastern boundaries of the development. The development will include the extension of all services throughout the site.

The maximum permissible development heights are as follows:

- *Agricultural Zone II (dwelling unit) – 8,5 m*
- *Single Residential Zone I (dwelling unit) – 8,5 m*
- *General Residential Zone II (group housing) – 8,5 m*
- *Business Zone III (neighborhood shop – parameters of shop apply) – 12,0 m.*

The project layout has been amended after recommendations made by both the heritage and visual practitioners. Primary factors informing the design are as follows:

- Boundaries of the study area;
- Layout of existing and proposed developments on adjacent properties;
- Contours of the study area with land sloping gently downhill towards the northeast; and
- The need to downscale the density away from east to west away from the town.

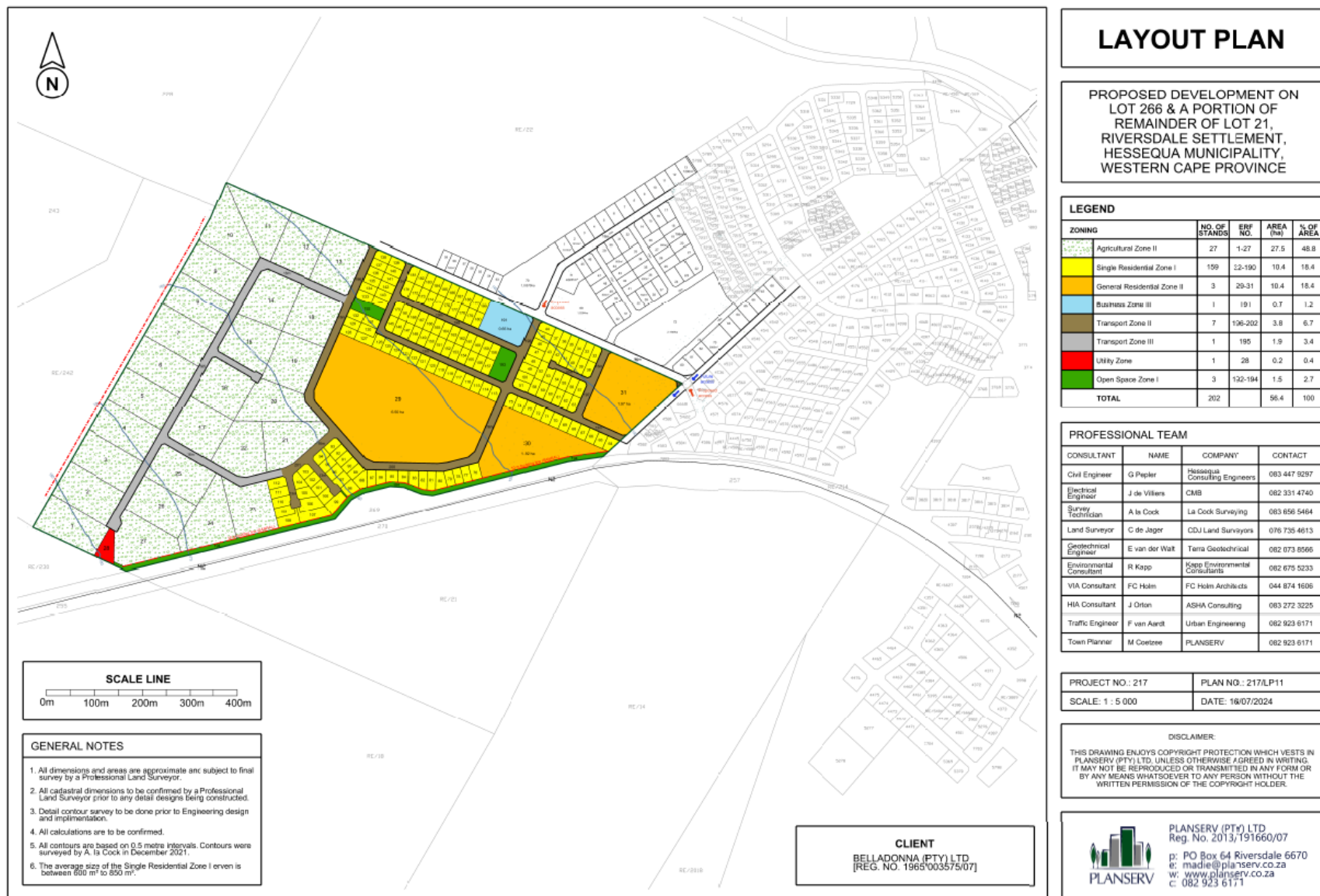
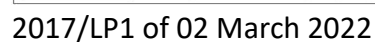
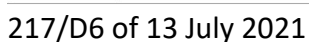
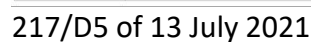
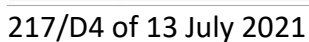
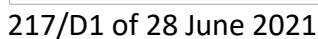
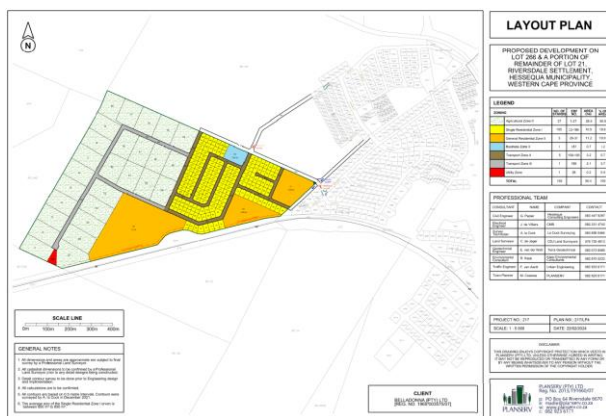


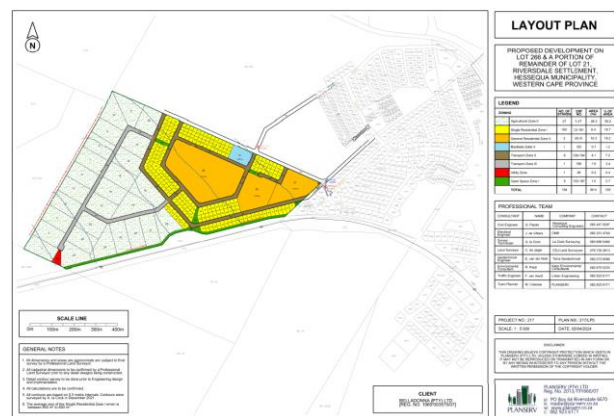
Figure 3: Proposed final layout plan of the development (Plan No. 217/LP11). Note that the access roads from the north are not part of the present application as they will form part of a separate application for development of the relevant property on which they fall.

Many different layouts for the urban development have been considered; Figure 4 shows some of these. However, they were largely compiled before the involvement of the heritage and visual specialists. Some of the earlier layouts omitted erf 266 and there was variability in the placement of the single residential and group housing erven. One or two Open Space Zone 1 erven have been incorporated, and midway through the project a Business Zone III erf was introduced; these have been retained in the final layout. About half of the study area is devoted to large Agriculture Zone II erven and these are appropriately focused in the west and northwest along the property boundary that would form the new western edge of Riversdale in coming years.

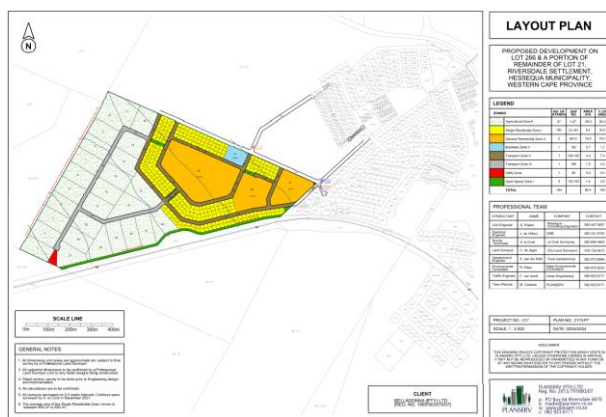




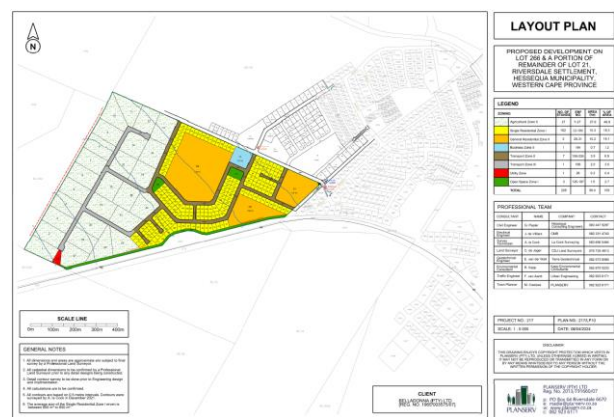
2017/LP4 of 02 February 2024



217/LP5 of 02 April 2024



217/LP7 of 02 April 2024



217/LP10 of 08 April 2024

Figure 4: Selection of layouts developed over time.

1.1.3. Aspects of the project relevant to the heritage study

All aspects of the proposed development are relevant, since excavations for foundations and/or services may impact on archaeological and/or palaeontological remains, while all above-ground aspects create potential visual (contextual) impacts to the cultural landscape and any significant heritage sites that might be visually sensitive.

1.2. Terms of reference

ASHA Consulting was asked to:

- Describe regional and local features of the receiving environment;
- Conduct desktop research;
- Conduct a field survey to search for sensitive areas and sites of heritage significance;
- Assess the potential impacts on identified heritage resources within a Heritage Impact Assessment (HIA) report that complied with the requirements of both the NHRA and Appendix 6 of the NEMA EIA regulations;
- Identify relevant legislation and legal requirements; and
- Provide recommendations on possible mitigation measures and management guidelines.

A Notification of Intent to Develop (NID) had previously been submitted to Heritage Western Cape (HWC). They responded on 8 December 2022 with the following comment:

RESPONSE TO NOTIFICATION OF INTENT TO DEVELOP: HIA REQUIRED
In terms of Section 38(8) of the National Heritage Resources Act (Act 25 of 1999) and the Western Cape
Provincial Gazette 6061, Notice 298 of 2003

NOTIFICATION OF INTENT TO DEVELOP: PROPOSED RESIDENTIAL DEVELOPMENT ON ERF 266 AND REMAINDER FARM 21, RIVERSDALE, SUBMITTED IN TERMS OF SECTION 38(1) OF THE NATIONAL HERITAGE RESOURCES ACT (ACT 25 OF 1999)

The matter above has reference.

Heritage Western Cape is in receipt of your application for the above matter received. This matter was discussed at the Heritage Officers Meeting held on the 28 November 2022.

You are hereby notified that, since there is reason to believe that the proposed residential development on Erf 266 and Remainder Farm 21, Riversdale, will impact on heritage resources, HWC requires that a Heritage Impact Assessment (HIA) that satisfies the provisions of Section 38(3) of the NHRA be submitted. Section 38(3) of the NHRA provides

- (3) *The responsible heritage resources authority must specify the information to be provided in a report required in terms of subsection (2)(a): **Provided that the following must be included:***
- (a) *The identification and mapping of all heritage resources in the area affected;*
 - (b) *an assessment of the significance of such resources in terms of the heritage assessment criteria set out in section 6(2) or prescribed under section 7;*
 - (c) *an assessment of the impact of the development on such heritage resources;*
 - (d) *an evaluation of the impact of the development on heritage resources relative to the sustainable social and economic benefits to be derived from the development;*
 - (e) *the results of consultation with communities affected by the proposed development and other interested parties regarding the impact of the development on heritage resources;*
 - (f) *if heritage resources will be adversely affected by the proposed development, The consideration of alternatives; and*
 - (g) *plans for mitigation of any adverse effects during and after the completion of the proposed development.*

(Our emphasis)

This HIA must in addition have specific reference to the following:

- Visual Impact Assessment on the Cultural Landscape

The HIA must have an overall assessment of the impacts to heritage resources which are not limited to the specific studies referenced above.

The required HIA must have an integrated set of recommendations.

The comments of relevant registered conservation bodies; all Interested and Affected parties; and the relevant Municipality must be requested and included in the HIA where provided. Proof of these requests must be supplied.

Although HWC only requested a visual specialist study, it is incumbent on the heritage consultant to ensure that all relevant aspects of heritage are covered in the HIA. As such, and because the southern coastal plain (Agulhas Plain) is known to host much archaeology, a full archaeological study was also included in this report.

Please note that the external services (stormwater, sewage, water and electricity connections) were added after the NID and field survey but that HWC has consented to their addition to the HIA without submission of a new NID.²

² Email correspondence from HWC Case officer dated 09 May 2025.

1.3. Scope and purpose of the report

An HIA is a means of identifying any significant heritage resources before development begins so that these can be managed in such a way as to allow the development to proceed (if appropriate) without undue negative impacts to the fragile heritage of South Africa. This HIA report aims to fulfil the requirements of the heritage authorities such that a comment can be issued by them for consideration by Western Cape Department of Environmental Affairs and Development Planning (DEA&DP) who will review the Basic Assessment (BA) and grant or refuse authorisation. The HIA report will outline any management and/or mitigation requirements that will need to be complied with from a heritage point of view and that should be included in the conditions of authorisation should this be granted.

1.4. The author

Dr Jayson Orton has an MA (UCT, 2004) and a D.Phil (Oxford, UK, 2013), both in archaeology, and has been conducting Heritage Impact Assessments and archaeological specialist studies in South Africa (primarily in the Western Cape and Northern Cape provinces) since 2004 (please see curriculum vitae included as Appendix 1). He has also conducted research on aspects of the Later Stone Age in these provinces and published widely on the topic. He is an accredited heritage practitioner with the Association of Professional Heritage Practitioners (APHP; Member #43) and also holds archaeological accreditation with the Association of Southern African Professional Archaeologists (ASAPA) CRM section (Member #233) as follows:

- Principal Investigator: Stone Age, Shell Middens & Grave Relocation; and
- Field Director: Colonial Period & Rock Art.

1.5. Declaration of independence

ASHA Consulting (Pty) Ltd and its consultants have no financial or other interest in the proposed development and will derive no benefits other than fair remuneration for consulting services provided.

2. LEGISLATIVE CONTEXT

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

The NHRA protects a variety of heritage resources as follows:

- Section 34: structures older than 60 years;
- Section 35: prehistoric and historical material (including ruins) more than 100 years old as well as military remains more than 75 years old, palaeontological material and meteorites;
- Section 36: graves and human remains older than 60 years and located outside of a formal cemetery administered by a local authority; and
- Section 37: public monuments and memorials.

Following Section 2, the definitions applicable to the above protections are as follows:

- Structures: “any building, works, device or other facility made by people and which is fixed to land, and includes any fixtures, fittings and equipment associated therewith”;

- Palaeontological material: “any fossilised remains or fossil trace of animals or plants which lived in the geological past, other than fossil fuels or fossiliferous rock intended for industrial use, and any site which contains such fossilised remains or trace”;
- Archaeological material: a) “material remains resulting from human activity which are in a state of disuse and are in or on land and which are older than 100 years, including artefacts, human and hominid remains and artificial features and structures”; b) “rock art, being any form of painting, engraving or other graphic representation on a fixed rock surface or loose rock or stone, which was executed by human agency and which is older than 100 years, including any area within 10m of such representation”; c) “wrecks, being any vessel or aircraft, or any part thereof, which was wrecked in South Africa, whether on land, in the internal waters, the territorial waters or in the maritime culture zone of the Republic, as defined respectively in sections 3, 4 and 6 of the Maritime Zones Act, 1994 (Act No. 15 of 1994), and any cargo, debris or artefacts found or associated therewith, which is older than 60 years or which SAHRA considers to be worthy of conservation”; and d) “features, structures and artefacts associated with military history which are older than 75 years and the sites on which they are found”;
- Grave: “means a place of interment and includes the contents, headstone or other marker of such a place and any other structure on or associated with such place”; and
- Public monuments and memorials: “all monuments and memorials a) “erected on land belonging to any branch of central, provincial or local government, or on land belonging to any organisation funded by or established in terms of the legislation of such a branch of government”; or b) “which were paid for by public subscription, government funds, or a public-spirited or military organisation, and are on land belonging to any private individual.”

Section 3(3) describes the types of cultural significance that a place or object might have in order to be considered part of the national estate. These are as follows:

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

While landscapes with cultural significance do not have a dedicated Section in the NHRA, they are protected under the definition of the National Estate (Section 3). Section 3(2)(c) and (d) list “historical settlements and townscapes” and “landscapes and natural features of cultural

significance” as part of the National Estate. Furthermore, some of the points in Section 3(3) speak directly to cultural landscapes.

2.2. Approvals and permits

2.2.1. Assessment Phase

Section 38(8) of the NHRA states that if an impact assessment is required under any legislation other than the NHRA then it must include a heritage component that satisfies the requirements of S.38(3). Furthermore, the comments of the relevant heritage authority must be sought and considered by the consenting authority prior to the issuing of a decision. Under the National Environmental Management Act (No. 107 of 1998; NEMA), as amended, the project is subject to a BA. The present report provides the heritage component. HWC is required to provide comment on the proposed project in order to facilitate final decision making by the DEA&DP.

2.2.2. Construction Phase

If archaeological or palaeontological mitigation is required prior to construction, then the appointed archaeologist or palaeontologist would need to obtain a workplan approval from HWC. This would be issued in their name. This is so that the heritage authority can ensure that the appointed practitioner has proposed an appropriate methodology that will result in the mitigation being undertaken properly.

2.3. Guidelines

HWC have issued minimum standards documents for HIAs and specialist studies. There is also a Western Cape Provincial guideline for heritage specialists working in an EIA context and which is generally useful. The reporting has been prepared in accordance with these guidelines. The relevant documents are as follows:

- Heritage Western Cape. 2016. Grading: purpose and management implications.
- Heritage Western Cape. 2019. Public consultation guidelines.
- Heritage Western Cape. 2021. Guide for Minimum Standards for Archaeology and Palaeontology reports submitted to Heritage Western Cape.
- Heritage Western Cape. 2021. Notification of Intent to Develop, Heritage Impact Assessment, (Pre-Application) Basic Assessment Reports, Scoping Reports and Environmental Impact Assessments, Guidelines for submission to Heritage Western Cape.
- Winter, S. & Baumann, N. 2005. Guideline for involving heritage specialists in EIA processes: Edition 1. CSIR Report No ENV-S-C 2005 053 E. Republic of South Africa, Provincial Government of the Western Cape, Department of Environmental Affairs & Development Planning, Cape Town.

2.4. Application timeline

The application to DEA&DP under NEMA is currently in the pre-application phase with submission estimated to be around early November.

3. METHODS

3.1. Literature survey and information sources

A survey of available literature was carried out to assess the general heritage context into which the development would be set. The information sources used in this report are presented in Table 1 with relevant dates of each source referenced in the text as needed. Data were also collected via a field survey. The data quality is suitable for the purpose of informing this report.

Table 1: Information sources used in this assessment.

Data / Information	Source	Date	Type	Description
Maps	Chief Directorate: National Geo-Spatial Information	Various	Spatial	Historical and current 1:50 000 topographic maps of the study area and immediate surrounds
Aerial photographs	Chief Directorate: National Geo-Spatial Information	Various	Spatial	Historical aerial photography of the study area and immediate surrounds
Aerial photographs	Google Earth	Various	Spatial	Recent and historical aerial photography of the study area and immediate surrounds
Cadastral data	CapeFarmMapper (http://gis.elsenburg.com/apps/cfm/#)	Current	Spatial	Cadastral boundaries, extents and aerial photography
Cadastral data	Chief Directorate: National Geo-Spatial Information	Various	Survey diagrams	Historical and current survey diagrams, property survey and registration dates
Background data	South African Heritage Resources Information System (SAHRIS)	Various	Reports	Previous impact assessments for any developments in the vicinity of the study area
Palaeontological sensitivity	South African Heritage Resources Information System (SAHRIS)	Current	Spatial	Map showing palaeontological sensitivity and required actions based on the sensitivity.
Background data	Books, journals, websites	Various	Books, journals, websites	Historical and current literature describing the study area and any relevant aspects of cultural heritage.

3.2. Field survey

The urban development site was subjected to a detailed foot survey by Anja Huisamen on 29th and 30th August 2023 with a repeat visit to further consider the views along the N2 on 1st February 2024. The survey was during late winter/early spring and the site was densely vegetated with wheat such

that ground visibility for the archaeological survey was heavily compromised. Other heritage resources are not affected by seasonality. During the survey the positions of finds and survey tracks were recorded on a hand-held Garmin Global Positioning System (GPS) receiver set to the WGS84 datum (Figure 5). Photographs were taken at times in order to capture representative samples of both the affected heritage and the landscape setting of the proposed development.

It should be noted that the amount of time between the dates of the field inspection and final report do not materially affect the outcome of the report.

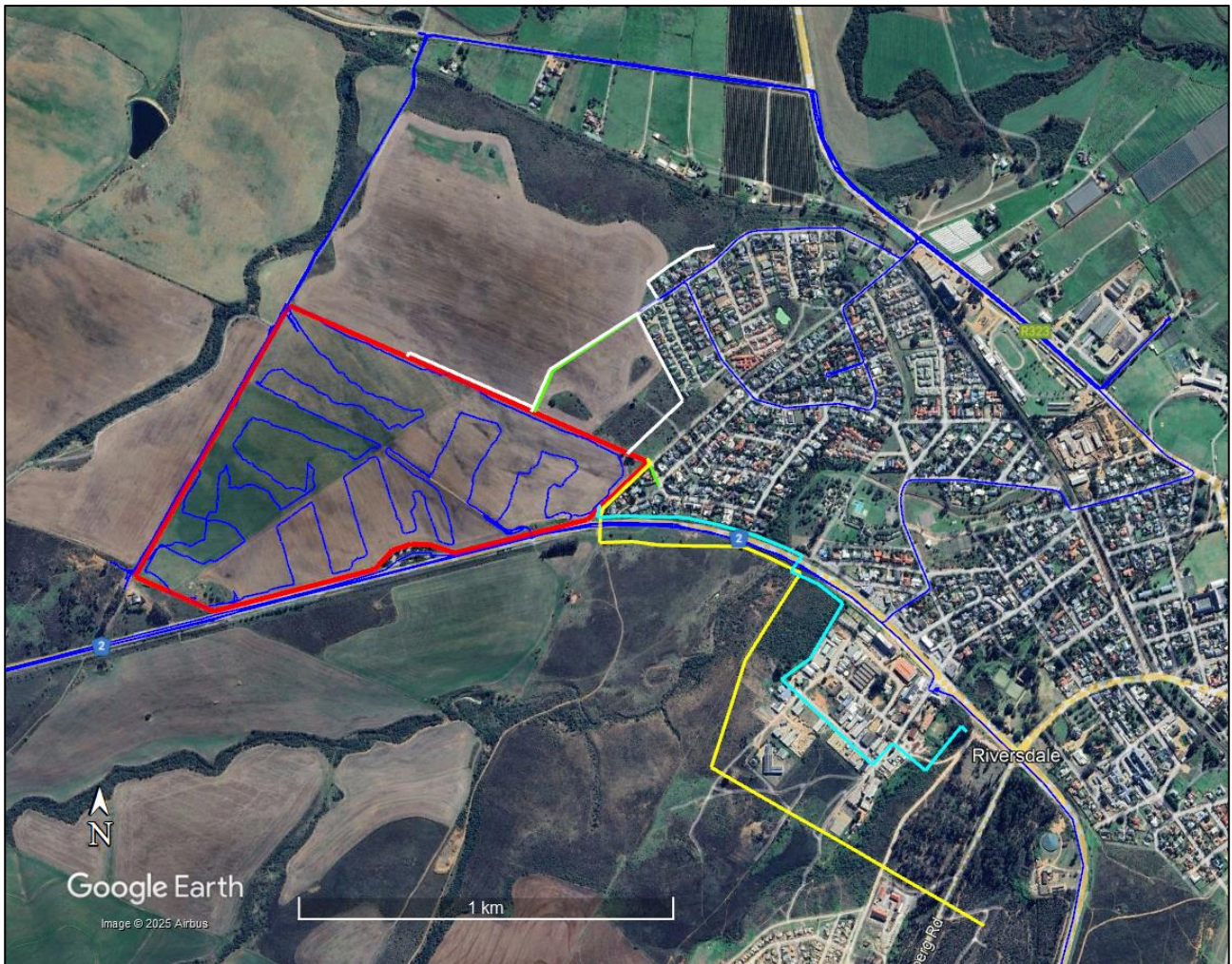


Figure 5: Aerial view of the study area (red polygon) showing the survey tracks (blue lines).

3.3. Specialist studies

The visual impact assessment requested by HWC was done by FC Holm cc and is appended to this report as Appendix 3.

3.4. Grading

S.7(1) of the NHRA provides for the grading of heritage resources into those of National (Grade I), Provincial (Grade II) and Local (Grade III) significance. Grading is intended to allow for the identification of the appropriate level of management for any given heritage resource. Grade I and II

resources are intended to be managed by the national and provincial heritage resources authorities respectively, while Grade III resources would be managed by the relevant local planning authority. These bodies are responsible for grading, but anyone may make recommendations for grading.

It is intended under S.7(2) that the various provincial authorities formulate a system for the further detailed grading of heritage resources of local significance but this is generally yet to happen. Heritage Western Cape (2016), however, uses a system in which resources of local significance are divided into Grade IIIA, IIIB and IIIC. These approximately equate to high, medium and low local significance, while sites of very low or no significance (and generally not requiring mitigation or other interventions) are referred to as Not Conservation Worthy (NCW).

3.5. Consultation

The NHRA requires consultation as part of an HIA but, since the present study falls within the context of an EIA which includes a public participation process (PPP), no dedicated consultation was undertaken as part of the HIA. However, the heritage consultant ensured that the required parties were included in the list of people and organisations consulted. Interested and affected parties would have the opportunity to provide comment on the heritage aspects of the project during the PPP.

3.6. Assumptions and limitations

The field study was carried out at the surface only and hence any completely buried archaeological sites would not be readily located. Similarly, it is not always possible to determine the depth of archaeological material visible at the surface. Due to the very dense vegetation covering (wheat), the survey was severely restricted. The few archaeological finds made are assumed to be representative of a much wider scatter present beneath the wheat. Due to this ground covering, it was not possible to accurately determine the density and significance of the archaeological materials. The associated services were only added to the development after the field survey and were therefore not considered in the field. Given their small footprint and locations, this is not considered to be a significant limitation to the assessment. It is assumed that the information provided for the assessment is an accurate reflection of the development proposal.

Cumulative impacts are difficult to assess due to the variable site conditions that would have been experienced in different areas and in different seasons. Survey quality is thus likely to be variable. As such, some assumptions need to be made in terms of what and how much heritage might be impacted by other developments in the broader area.

4. PHYSICAL ENVIRONMENTAL CONTEXT

4.1. Site context

Although the study area is noted to be well within the overall town allotment area (Figure 6), it is evident that it is almost completely surrounded by farmland. Just a small section in the east borders on the existing urban area of Riversdale. However, the N2 freeway runs along the southern edge of the study area and a single house stands on a large erf just beyond the south-western corner of the study area. The farmland is all used for dryland agriculture (wheat) although small areas of untilld

land do occur in places. Further north other types of agriculture are practiced. The site has been specifically identified for housing development (Figure 7) and recently included within the urban edge of Riversdale (Figure 8).



Figure 6: Aerial view showing the study area (red polygon) to be located within the town allotment area (orange polygon).

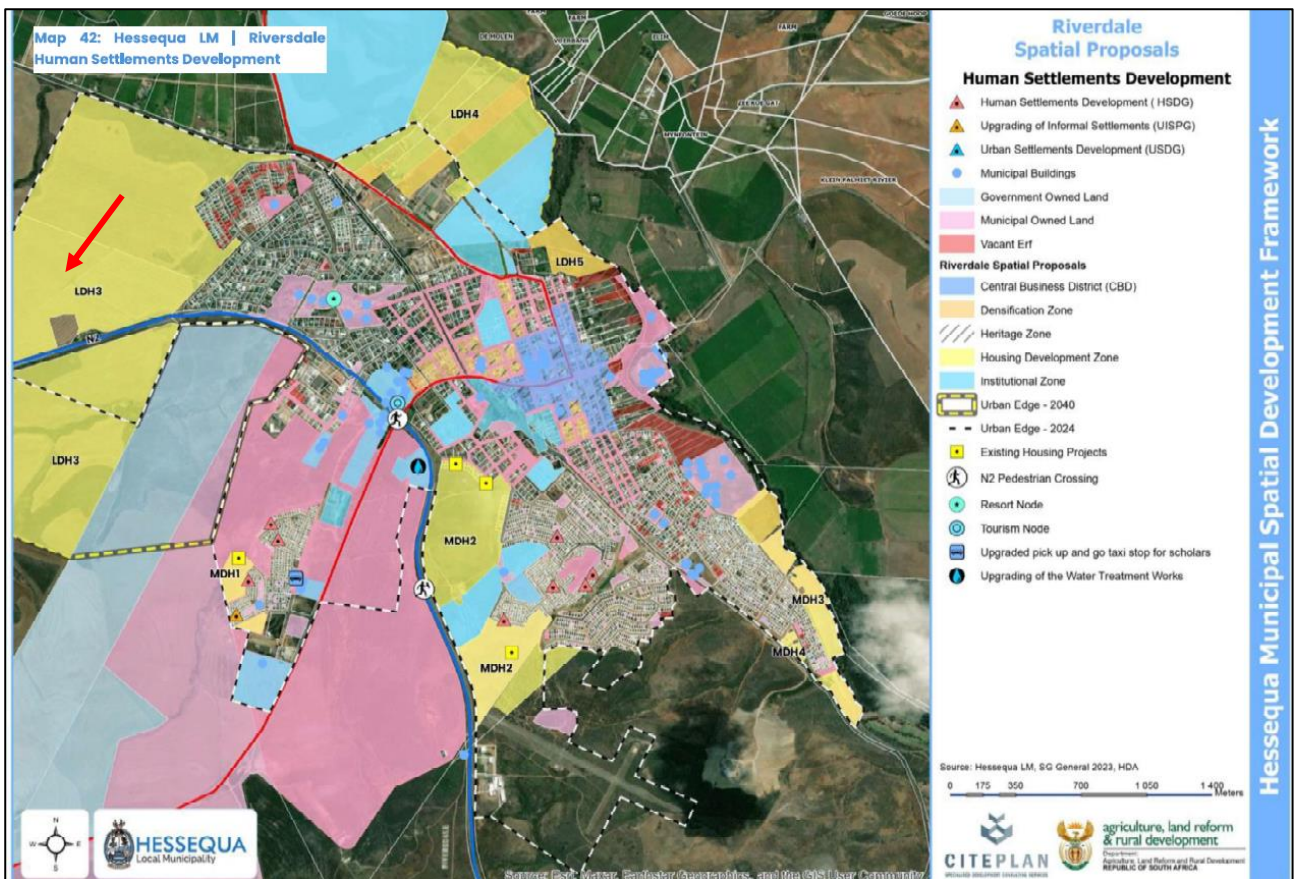


Figure 7: Map showing the approved urban edge of Riversdale (black and white dashed line). Source: Hessequa Local Municipality Spatial Development Framework 2024/2025 (Draft). Site indicated by red arrow.

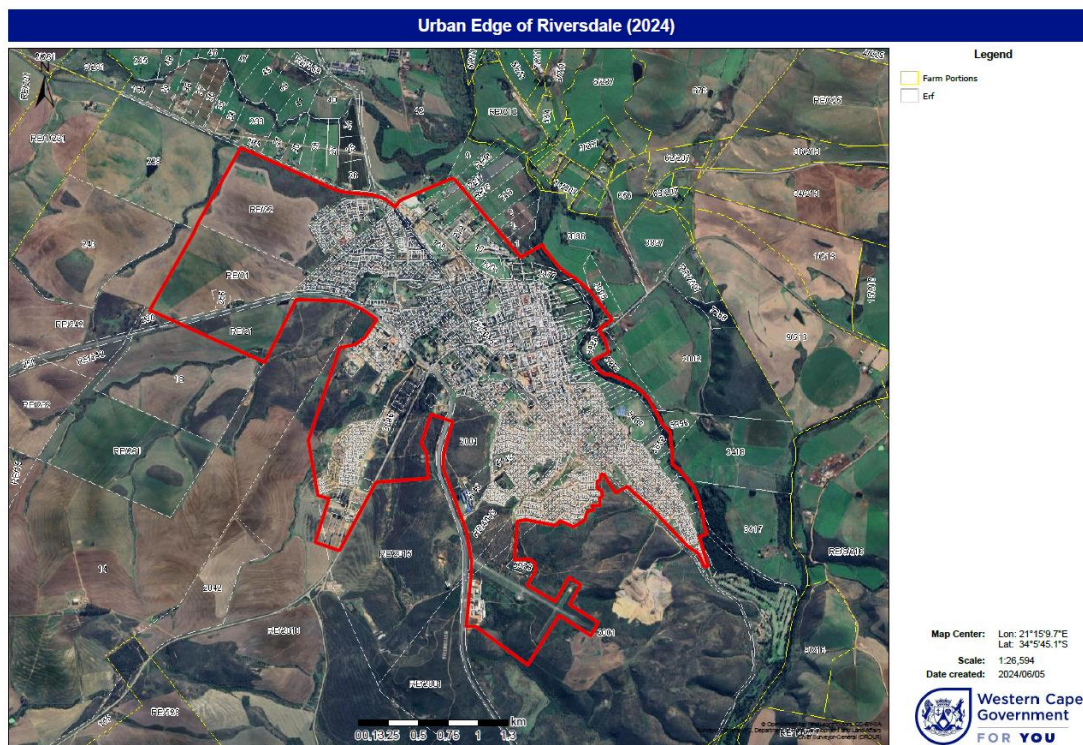


Figure 8: Map showing the urban edge of Riversdale (red polygon).

4.2. Site description

The study area for the urban development slopes gently downhill from southwest to northeast, dropping some 49 m over a distance of 1.36 km. With the exception of small areas in the southwest, southeast and east the entire area is used for the cultivation of wheat. Piles of stones cleared from the ploughed lands were seen at times along the edges of the study area. Figures 9 to 17 show the nature of the study area.



Figure 9: Looking southwest from the northern corner of the study area, along its western boundary.



Figure 10: Looking south from the northern edge of the study area. The rest area along the N2 is at the trees in mid-picture.



Figure 11: Looking west from the eastern corner of the study area.



Figure 12: Looking west along the southern edge of the study area adjacent to the N2 from the south-eastern corner of the study area. The pile of stones has been cleared from the agricultural lands.



Figure 13: Looking west along the southern edge of the study area towards the rest area along the N2. Road signage along the road is visible.



Figure 14: Looking southwest through the southern part of the study area. The trees are at the rest area long the N2.

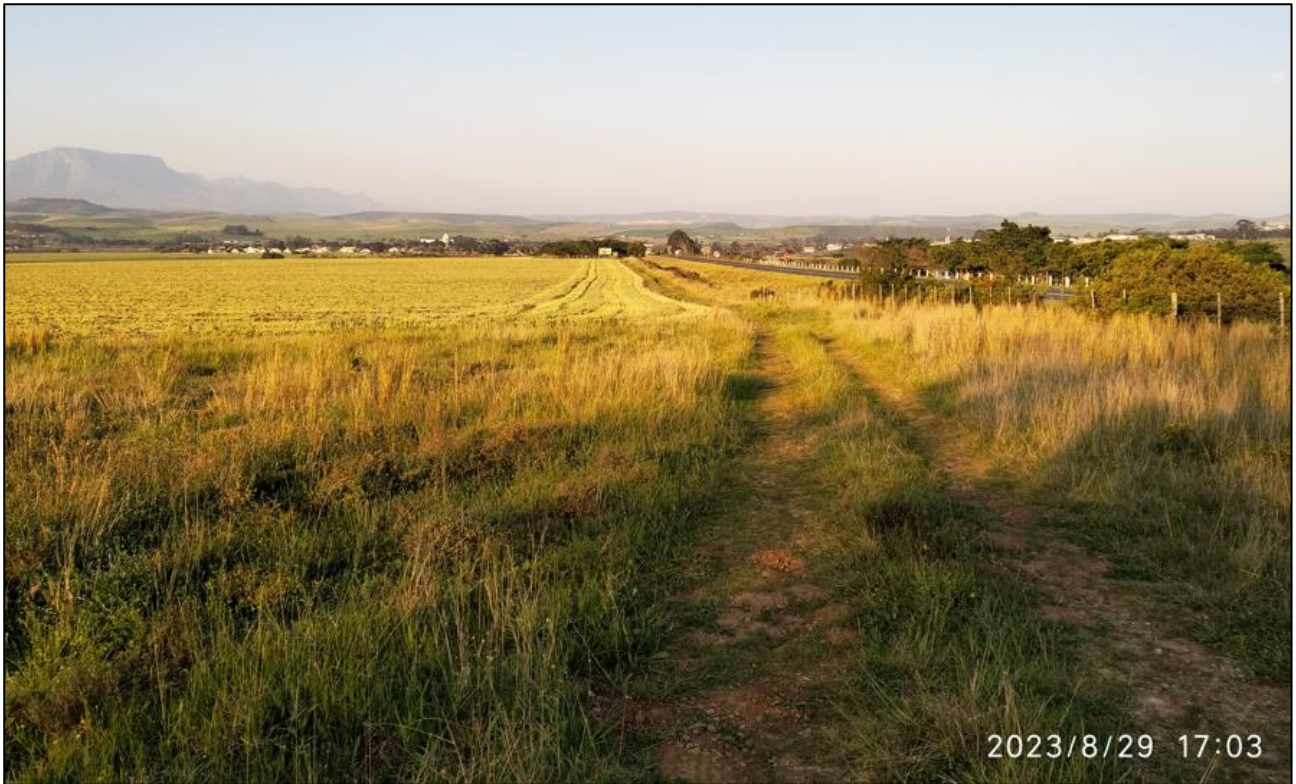


Figure 15: Looking east along the southern edge of the study area from its southernmost point with the N2 openly visible to the right. Riversdale town is amongst the trees in the background.



Figure 16: Looking towards the east from the western edge of the study area with Riversdale town visible in the background.



Figure 17: Cleared rocks and gravel along the northern edge of the site.

5. FINDINGS OF THE HERITAGE STUDY

This section describes the heritage resources recorded in the study area during the course of the project.

5.1. Palaeontology

Although the SAHRIS Palaeosensitivity Map shows the site to be of very high and unknown sensitivity (Figure 18), HWC did not request a specialist palaeontological assessment. This is likely because it is well-known that the bedrocks of the Agulhas plain are highly deformed and deeply weathered. Nevertheless, because of the potentially high sensitivity, this aspect of heritage is briefly considered here.

According to John Almond (pers.comm. 2024) the 1:250 000 geological map indicated that within the study area "High Level Gravels" - i.e. ancient alluvial gravels - overlie Early Cretaceous fluvial / lacustrine sediments of the Kirkwood Formation (Uitenhage Group). These Late Caenozoic gravels are most noticeable in piles of cobbles and boulders accumulated along the edges of the ploughed lands. There is a small possibility that downwasted dinosaur bones or petrified wood blocks derived from the Cretaceous bedrocks could be present amongst the gravels. The Kirkwood Formation itself is likely to be weathered in the near-surface impact zone but the potential for well-preserved, in

situ fossil wood or dinosaurian remains here cannot be excluded. Given the very low bedrock exposure levels within the study area, these potential subsurface fossil occurrences are best handled through a Chance Fossil Finds protocol.

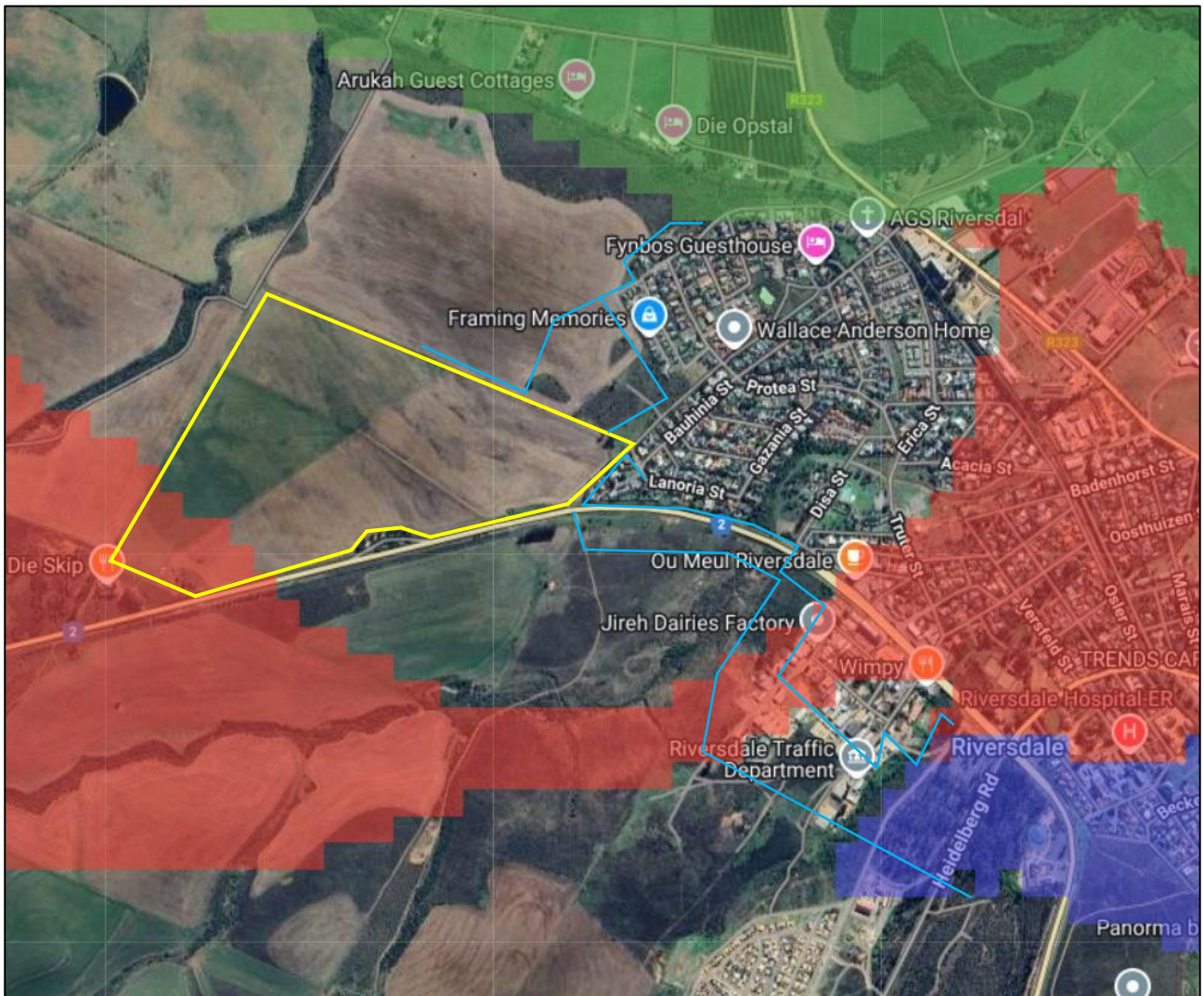


Figure 18: Extract from the SAHRIS Palaeosensitivity Map showing the site to be of very high (red shading) and unknown (clear) palaeontological sensitivity. The services south of the N2 cross areas of very high (red), low (blue) and unknown (clear) sensitivity.

5.2. Archaeology

5.2.1. Desktop study

SAHRIS did not reveal any projects in the immediate vicinity of the proposed development. However, the southern Cape coast is well-known for the highly significant archaeological resources that are regularly encountered there. The coastline is naturally rich in sites, including the well-known Blombos Cave (Henshilwood 1996; Henshilwood *et al.* 2001a, 2001b) to the south of Riversdale and Klipdrift Cave (Henshilwood *et al.* 2014) to the southwest. Although the lack of marine shell makes archaeological sites less easy to locate away from the coast, there have still been a number of reported sites of archaeological value on the southern coastal plain.

Early Stone Age (ESA) artefacts are particularly commonly encountered (e.g. Arthur 2008b; Goodwin & Van Riet Lowe 1929; MacFarlane 1949; Nilssen & Yates 2007; Orton 2010, 2021a; Webley & Orton 2009), but Middle (MSA) and Later (LSA) Stone Age artefacts are also known. Arthur (2008a) documented a number of sites near Swellendam that indicated Khoekhoen occupation of the area in recent centuries, while further east, along the banks of the Gouritz River, Orton (2010) found several LSA sites with stone artefacts trapped in the river silts. Near Albertinia, Nilssen and Yates (2007) reported two silcrete quarry sites that were used in pre-colonial times as sources of stone material for making tools. Surveys some 20-30 km to the south of Riversdale yielded variable results. Deacon (2008) failed to locate any archaeological resources in his survey, while Nilssen (2012) found very few artefacts in quite an extensive survey and Orton (2014) noted a small number of MSA artefacts adjacent to a calcrete ridge. Immediately north of the same ridge, Orton (2021b) sampled an extensive scatter of MSA materials that included a Still Bay bifacial point. This scatter was located in a sand dune, suggesting that the soft sand was targeted for occupation.

Although historical archaeological materials can be expected near to historical farmsteads, there is no known evidence to date in this area.

Two small structures – presumably labourers’ cottages – are visible on aerial photography to the south of the N2, some 155 m from the edge of the eastern part of the study area. Google Street View imagery shows that they have been completely stripped and are in ruin. Historical photography shows that they lost their roofs between 2005 and 2009. They are clearly visible on the 1983 imagery adjacent to a grove of gum trees, the 1966 image is unclear but the trees are certainly present, while in 1954 it is evident that neither the trees nor the houses were present. They are thus less than 70 years old. They are outside the development footprint and of no further concern.

5.2.2. Site visit

Despite the very poor visibility, a number of ESA artefacts were seen. It is likely that many more occur but were just not visible due to the wheat. The artefacts were widely scattered across the site but too few were seen to determine whether any concentrations were present. The artefacts include cores, flakes and bifaces, some of which are handaxes (Figures 19 to 27). There was a high proportion of bifacial artefacts seen, but this might be due to the poor visibility which resulted in larger artefacts being more likely to be seen. These finds are from the Acheulean phase of the ESA. Although they could just be background scatter finds, it is more likely that the real density is somewhat higher than that typically ascribed to background scatter.



Figure 19: A quartzite core.



Figure 20: A quartzite core.



Figure 21: A bifacially flaked artefacts that is likely an unfinished handaxe.



Figure 22: A Levallois flake.



Figure 23: A bifacially flaked artefact which is most likely a core.



Figure 24: A quartzite handaxe with its tip missing.



Figure 25: A core (left) and flake (right).



Figure 26: A bifacially flaked artefact that is either an unfinished handaxe or else a core.



Figure 27: A bifacially flaked artefacts that is either a crude handaxe or else an unfinished one.

5.3. Graves

No graves were seen, and none are expected. If any had ever been present, they would long since have been ploughed up.

5.4. Historical aspects and the Built environment

5.4.1. Desktop study

According to Fransen (2004, 2006), Riversdale was laid out on a farm called Doornkraal, part of which was bought in 1837 by Dr William Robertson of Swellendam on behalf of the Dutch Reformed Church. The homestead of the farm was converted into a church and later, after another church was built in 1844, it served as the parsonage until 1945. The town was named after Harry Rivers, who was landdrost of Swellendam from 1825 to 1841. Until some 50 years ago there were still many historical structures in the town but Fransen (2004) notes that since then there has been massive and large-scale destruction of the historical buildings of Riversdale so that the historical town centre

is now completely lacking in character. Nonetheless, for the surviving historical buildings and historical town layout, Winter and Oberholzer (2013) still see the old portion of the town as worthy of Grade III.

The aerial photographs in Figures 28 to 33 show the development of the town through the latter half of the 20th century and early 21st century. The earliest image, from 1954, shows the edge of town still some distance from the site. The study area itself was as yet uncultivated (Figure 28). By 1966 some new streets had been developed on the western edge of Riversdale but the town was still the same distance away from the study area (Figure 29). By 1983 urban development had moved closer to the study area with new roads constructed on the adjacent property (Figure 30). The study area was as yet uncultivated which means that even wheat farming is not an historical land use on the property. The 1983 image also shows that the uncultivated land to the west of the site was a sand and/or gravel mine at that time. It was presumably not properly rehabilitated with topsoil and is no longer fit for cultivation. The bushy areas appear to be indigenous vegetation. By the early 21st century the remaining gaps in the area immediately east of the study area had been filled and the town was now contiguous with the study area (Figure 31). As such, it is evident that there are no historical concerns in terms of visual impacts to the western part of the town which is all modern.



Figure 28: 1954 aerial photography (Job 344, strip 4, photograph 60273) showing the site to be as yet uncultivated. Riversdale was smaller with a low density western edge.

The aerial photographs also show that there have never been any historical structures or other features on the site. Although an access road to the property immediately to the southwest of the study area is visible in 1954 and the gum tree line along the road was in place by 1966, it appears as though the house was first visible in the 1984 image.



Figure 29: 1966 aerial photography (Job 562, strip 2, photograph 00153) showing the site in the same state as today. The town of Riversdale was far smaller.



Figure 30: 1983 aerial photography (Job 498_11, strip 2, photograph 00168) showing the site in the same state as today. The town of Riversdale had now encroached into the property immediately east of the site.



Figure 31: 2005 aerial view of Riversdale (Google Earth) showing the town adjacent to the study area.

Some structures in Riversdale are declared Provincial Heritage Sites (PHSs) as is one farmhouse (Zeekoegat) a short way to the north of the town. All are more than 2 km from the study area.

Prior to being renumbered Lot 21 of Riversdale Settlement, the study area was known as Lot J of Oakdale Estate and granted to J.J. van Rensburg on 29th March 1949. Lot 266 was subdivided off the property in 2009 and registered in 2018. Lots 269 and 270 were subdivided in 2012 and registered in 2015. These latter comprise the N2 road reserve through the property.

5.4.2. Site visit

The site visit found no historical features on or close to the study area. The adjacent house to the southwest (40 m from the study area boundary) was noted to be a modern house (Figure 32), consistent with its non-appearance on the 1966 aerial photography.



Figure 32: *View of the modern house located immediately southwest of the study area.*

5.5. Cultural landscapes and scenic routes

Cultural landscapes are the product of the interactions between humans and nature in a particular area. Sauer (1925) defined them thus: “The cultural landscape is fashioned from a natural landscape by a cultural group. Culture is the agent, the natural area is the medium, the cultural landscape the result”. Cultural landscapes are thus areas containing multiple ‘sites’ and which have been shaped by the interaction of natural processes and anthropogenic activities such as construction and agriculture. Scenic routes are well-travelled roads that pass through natural or cultural landscapes with aesthetic value and that often have iconic or visually attractive views.

The study area is part of the extensive southern coastal plain of South Africa which is characterised by gently rolling hills and a patchwork of wheat fields and indigenous vegetation, but with the former strongly dominating (Figure 33). Clumps of gum trees are commonly seen throughout the region. The Cape Fold Belt mountains to the north provide a visual boundary for the coastal plain and form a strong visual contrast with the plain. It is an ever-present feature of the landscape when traveling the N2 and forms the backdrop of all northwards views. Although the study area and surrounding landscape are unremarkable, the area is part of a far wider landscape that can be said to have cultural significance for its aesthetic value. For this reason, the N2 is regarded as a significant scenic route.

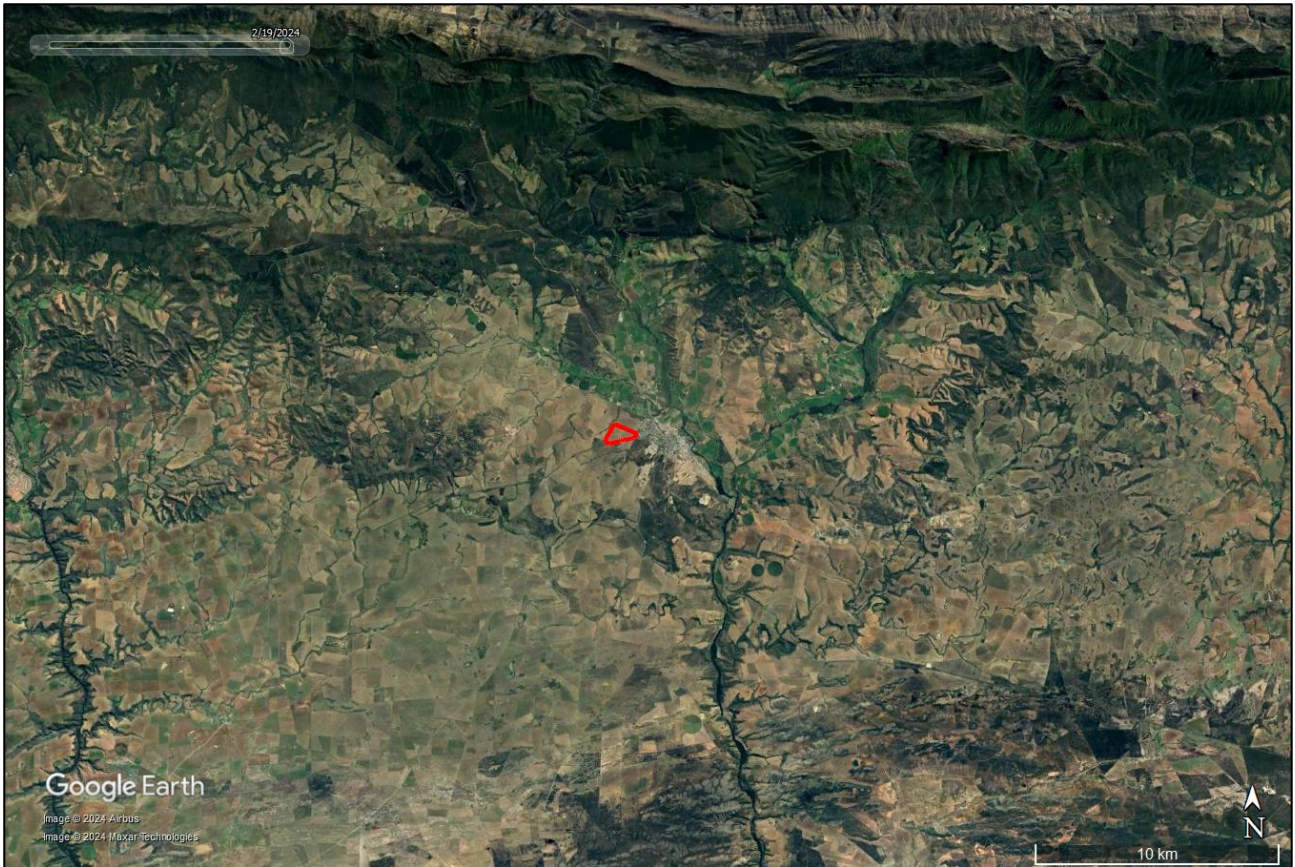


Figure 33: Aerial view of that section of the southern coastal plain surrounding Riversdale showing the patchwork of wheat fields and the mountains to the north. The study area is marked in red.

The adjacent part of Riversdale town is entirely modern as shown by the aerial photography in Figures 28 to 31. The urban landscape is thus not considered a heritage landscape and requires no further attention. The study area itself is a wheat field and thus part of the agricultural landscape which is historical. Figure 34 shows that gum trees are present in places around the area, though the only trees within the study area boundary are in the extreme eastern corner. Town expansion is inevitable as populations grow, but it is important that such expansion happens in a sensitive manner that acknowledges the surrounding landscape. The visual impact assessment will further address impacts to the cultural landscape.



Figure 34: Looking southwest towards the site from the south-western end of Erica Street, some 380 m from the study area. Clumps of gum trees are visible in a number of places in the local landscape.

The study area slopes downhill towards the northeast which means that it is not visible from the N2 to the west of the study area (Figure 35) but, traveling eastwards, becomes visible only once one is adjacent to it (Figure 36). Adjacent to the study area there is intermittent screening vegetation in the road reserve, but the proposed new development would be visible (Figures 37 & 38). From a short distance east of the study area the proposed development would not be visible at all due to screening vegetation and the modern westernmost part of Riversdale (Figure 39).



Figure 35: Looking east from a point some 600 m west of the study area. The study area lies behind the gum trees on the left hand side of the road and is not visible on this approach.



Figure 36: Looking east from the southern corner of the study area which lies behind the fence in view. The corner of the study area coincides with the left hand edge of the photograph.



Figure 37: Looking west along the N2 with the study area to the right of the road in this view. The rest area along the N2 is at the dense tree cluster in the background.

Further east the N2 runs south-eastwards through a low area and then runs uphill towards the south. In this latter area the site is largely screened by adjacent gum trees and road cuttings but intermittent visibility would be possible at distances of greater than about 1.8 km. Beyond 2.4 km from the site it is completely obscured by topography. It can thus be concluded that the N2 will only be minimally affected by the proposed development, since visibility of the site is fleeting with views of the development only likely to be possible from immediately adjacent to the study area.



Figure 38: Looking west along the N2 from the south-eastern corner of the study area which is behind the fence at right.



Figure 39: Looking east along the N2 from a point about 230 m east of study area which would be behind the car and house in mid-view.

To the north of Riversdale, the R323 Garcia Pass has been rated as a Grade II route by Winter and Oberholzer (2013). However, the historically significant part of this route lies far to the north and will not be affected by the proposed development.

5.6. Visual impact assessment

Based on the context and type of development, FC Holm (2024) expected that a high visual impact could potentially result from the proposed development. The site is noted to have been almost completely transformed by agriculture and has very little vegetation that can screen any development. In fact, much of the land surrounding the town has been transformed by agriculture and this adds to the landscape setting of the town. Within the western part of the town adjacent to the site the building typology is noted to be mostly single storey residential buildings. Trees are common between and around the properties. Three group housing complexes are noted to occur nearby.

The N2 is identified as an important scenic route and view corridor. The site is visible from the N2 and FC Holm (2024) notes the importance of the development adding to the landscape character rather than resulting in significant change. The N2 sand residents to the east and northeast are identified as highly sensitive receptors.

Due to the undulating nature of the terrain both on and surrounding the site, visibility of the proposed development will be variable. While the site slopes downhill towards the northeast, there is a part of the slope that is convex and development on that section will be more visually sensitive. The Zone of Visual Influence extends to between 2 km and 5 km from the site. Partial screening is provided by existing development and vegetation in the surrounding area but, nonetheless, the visual absorption capacity is rated as moderate to low. Although the proposed development will fit in with the ongoing urban expansion to its east, the proposed building density is generally higher. However, although the 1 ha lifestyle erven along the western edge will result in an improved transition between the rural and urban environments, the visual intrusion is rated moderate to high.

Various points were chosen as key viewpoints and maps were made to show the potential visibility of the site from these locations. They indicate that the visibility of the site will vary considerably depending on where it is viewed from. Key for the heritage study are views from the N2 scenic route. From the Ou Meul Restaurant along the N2, 710 m to the southeast of the site, the development will be visible in the distance. It will be visible on the skyline but with some screening from existing trees (Figure 40). Visual exposure from this side is rated as moderate to high. Further south the development will be slightly less visible and more likely perceived as part of the existing town (Figure 41). Visual exposure from there is rated as medium. The site will be less visible when approaching from the west due to topography. The larger lifestyle erven will be the first aspect one sees with the higher density development located further east, closer to the existing town (Figure 42). Visual exposure from this side is rated as moderate.



Figure 40: Photomontage facing west showing the development as viewed from the N2, 710 m southeast of the nearest part of the proposed development. Source: FC Holm (2024: fig. 45). The red brace has been added to indicate the extent of the development in view.

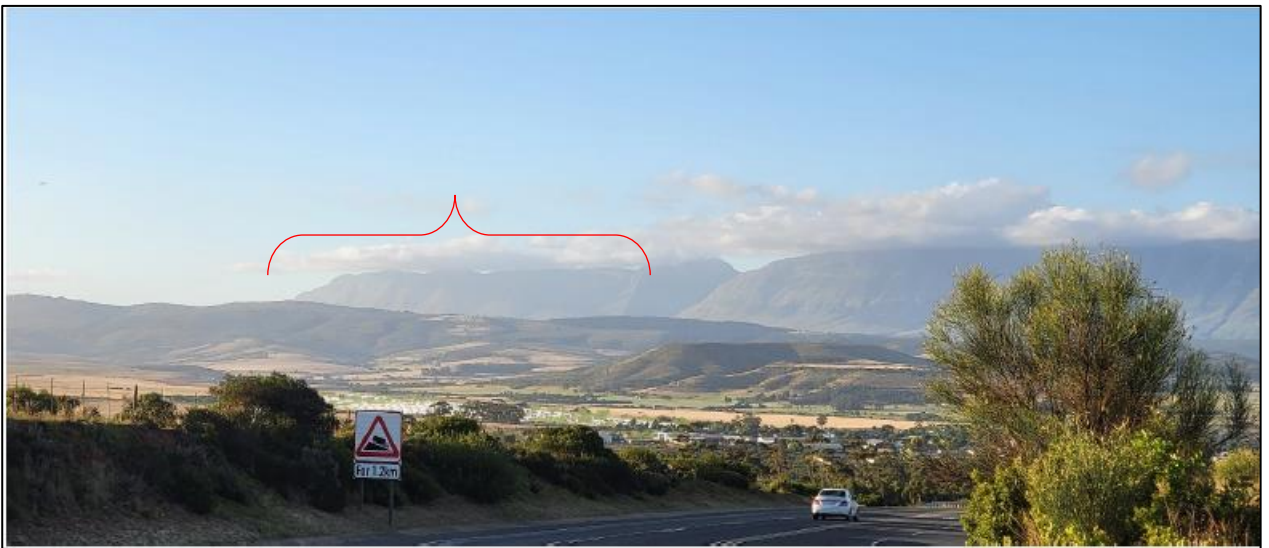


Figure 41: Photomontage facing northwest showing the development as viewed from the N2, 2.4 km southeast of the nearest part of the proposed development. Source: FC Holm (2024: fig. 54). The red brace has been added to indicate the extent of the development in view.



Figure 42: Photomontage showing the development as viewed from the N2 at the south-western corner of the proposed development. Source: FC Holm (2024: fig. 48). The red brace has been added to indicate the extent of the development in view.

Owing to the addition of the external infrastructure, an addendum to the VIA was produced and is submitted along with the VIA. The author notes that the subsurface services will have no visual implications so long as the trenches are appropriately rehabilitated and the above ground 11 kV powerline will not be out of place adjacent to the Riversdale industrial area.

5.7. Statement of significance and provisional grading

Section 38(3)(b) of the NHRA requires an assessment of the significance of all heritage resources. In terms of Section 2(vi), “cultural significance” means aesthetic, architectural, historical, scientific, social, spiritual, linguistic or technological value or significance. The reasons that a place may have cultural significance are outlined in Section 3(3) of the NHRA (see Section 2 above).

Although they cannot be properly understood due to the poor ground visibility at the time of the survey, indications are that archaeological materials are present on the site. A key concern is that the density of such materials cannot be determined. These archaeological resources are most likely to have low cultural significance at the local level for their scientific value and could potentially be graded IIIC with the implication that mitigation can be implemented and the material would not prevent development. It is also possible that their density may be too low for meaningful research and that a grade of NCW may apply with no mitigation required. The chances of a higher significance and grade are considered very small.

There are no graves or historical/built environment resources on or close to the site.

On site the landscape does not have much intrinsic cultural significance. The local urban landscape has no heritage value and the few remaining historical structures in the core area of Riversdale lie far from the proposed development, more than 1 km away, and engulfed by modern buildings. However, the wider region spanning the Agulhas Plain from the mountains to the coast does have cultural significance for its aesthetic value and is rated as having at least medium cultural

significance at the local level. It can be graded at least IIIB. Included in this landscape is the N2 as a scenic route. It, too, is thus graded IIIB.

Other than the wider landscape and N2 scenic route, there are no specific graded heritage resources to be mapped on or close to the site. As such, no grade map is provided.

5.8. Summary of heritage indicators

- Uncontrolled damage to fossils should be minimised as far as possible.
- Uncontrolled damage to archaeological resources should be minimised as far as possible.
- If they cannot be avoided, significant archaeological resources should not be damaged or destroyed without appropriate further study.
- The cultural landscape should not be dominated by the proposed development as seen from publicly accessible viewpoints.
- The development should not be imposed on the landscape but should fit comfortably into it.
- Tree-planting with appropriate species to be implemented along streets and external boundaries according to landscape plan.
- Areas with the greatest bulk should be positioned closer to the existing town and away from the N2.
- No buildings to be taller than double story.
- Vernacular architectural language should be employed throughout the development with the main focus being on gabled buildings with pitched roofs. Lean-to attachments and outbuildings may have flat roofs. Large blank walls, tall glazed surfaces and columns (among other things) should be avoided.
- Garages to be placed behind line of house façade.
- Building walls to be largely white or earthy colours. Accent walls in face-brick or stone are acceptable.
- Roofs to be green or dark in colour. Thatch is also acceptable.
- N2 interface and all 1 ha erven to have permeable boundary treatment with trees and hedges for privacy.
- Non-permeable boundary treatment to be minimised elsewhere in the development.

An architectural design manual should be prepared that formalises the above and provides separately for each of the categories of development. A degree of commonality will allow for a sense of unity at the larger scale, but the focus should be on allowing enough flexibility in individual designs to avoid uniformity and monotony. The architectural guidelines should promote overall design sensitivity rather than being a set of restrictive conditions and will assist with the safeguarding of the region's scenic resources.

6. ASSESSMENT OF IMPACTS

The impacts identified for this project are:

- *Construction phase:*
 - Impacts to palaeontology
 - Impacts to archaeology
 - Impacts to the cultural landscape
- *Operation phase:*
 - Impacts to the cultural landscape
- *Decommissioning phase:*
 - No decommissioning phase anticipated

While palaeontological heritage is assessed in the separate specialist study, all the other impacts are considered here.

6.1. Construction Phase

6.1.1. Impacts to palaeontological resources

Direct impacts to palaeontological resources would occur during the construction phase when excavations for foundations and services are made. While fossil wood fragments could be found, they would be difficult for lay people to recognise. However, fossil bones (potentially dinosaur) would be more recognisable and are of significant research value. The potential impact intensity is thus regarded as high, but since it is improbable that they would be found, the significance before mitigation is **medium negative** (Table 2). Mitigation would entail implementing a fossil chance finds procedure (see Appendix 2). With mitigation the impact significance reduces to **low negative**, although the reporting of certain finds could lead to a **positive** impact (benefit) for science.

There are no fatal flaws in terms of construction phase impacts to palaeontology.

Table 2: Assessment of construction phase palaeontological impacts.

Potential impacts on palaeontological resources	
Nature and status of impact:	Direct, negative
Extent and duration of impact:	Regional, permanent
Intensity	High
Probability of occurrence:	Improbable
Degree to which the impact can be reversed:	Low
Degree to which the impact may cause irreplaceable loss of resources:	High
Cumulative impact prior to mitigation:	Low
Significance rating of impact prior to mitigation (Low, Medium, Medium-High, High, or Very-High)	Medium
Degree to which the impact can be mitigated:	High
Proposed mitigation:	Implement Chance Finds Procedure such that isolated fossils can be collected during development and safeguarded for future research
Cumulative impact post mitigation:	Low

Significance rating of impact after mitigation (Low, Medium, Medium-High, High, or Very-High)	Low
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6.1.2. Impacts to archaeological resources

Direct impacts to archaeological resources would occur during the construction phase when construction equipment is brought onto site and grubbing and excavation begins. It is currently unknown how much archaeology is present on the site which means that intensity cannot be accurately estimated. The probability of impacts occurring is rated probable because enough evidence exists to suggest that there is some archaeology present. The impact significance before mitigation could thus be **medium negative** (Table 3). Because of the very low visibility a key mitigation measure will be to conduct a pre-construction survey during the dry season when the site is not planted with wheat. This will enable an accurate determination of whether sufficient archaeology exists to conduct a mitigation phase. Alternatively, it will enable a proper record of the archaeology on site to be made prior to its destruction. It is suggested that this survey could be done under an approved Workplan so that immediate collection of artefacts could occur, if deemed appropriate, to save a phase of work. With mitigation the impact significance will be **low negative**.

There are no fatal flaws in terms of construction phase impacts to archaeology.

Table 3: Assessment of construction phase archaeological impacts.

Potential impacts on archaeological resources	
Nature and status of impact:	Direct, negative
Extent and duration of impact:	Local, permanent
Intensity	Medium
Probability of occurrence:	Probable
Degree to which the impact can be reversed:	Low
Degree to which the impact may cause irreplaceable loss of resources:	High
Cumulative impact prior to mitigation:	Low
Significance rating of impact prior to mitigation (Low, Medium, Medium-High, High, or Very-High)	Medium
Degree to which the impact can be mitigated:	High
Proposed mitigation:	Pre-construction survey during dry season to determine true density of ESA materials and recommend mitigation if required
Cumulative impact post mitigation:	Low
Significance rating of impact after mitigation (Low, Medium, Medium-High, High, or Very-High)	Low

6.1.3. Impacts to the cultural landscape

Direct impacts to the cultural landscape would occur during the construction phase when construction equipment enters the site and work begins. The equipment and activity will not be compatible with the current rural environment and will cause a visual disruption. The new development will also result in a change of character of the study area from rural to urban. The construction phase is envisaged to be short term, although it is possible that some plots may not be sold and developed within five years. The impact significance has been rated **medium negative** before mitigation. Developing the project in phases will reduce the extent of impacts at any one time, but this may not be feasible to implement. Important mitigation measures are to ensure that

disturbed areas are rehabilitated and revegetated as soon as possible after construction and that tree-planting (in terms of a landscape plan) is implemented very early on. After mitigation the impact significance would reduce to **low negative**. For visibility and visual scarring, the VIA rates the impact significance as **medium negative** and **medium-low negative** before and after mitigation respectively.

There are no fatal flaws in terms of construction phase impacts to the cultural landscape.

Table 4: Assessment of construction phase impacts to the cultural landscape.

Potential impacts on the cultural landscape	
Nature and status of impact:	Direct, negative
Extent and duration of impact:	Local, short term
Intensity	Medium
Probability of occurrence:	Definite
Degree to which the impact can be reversed:	High
Degree to which the impact may cause irreplaceable loss of resources:	Low
Cumulative impact prior to mitigation:	Low
Significance rating of impact prior to mitigation (Low, Medium, Medium-High, High, or Very-High)	Medium
Degree to which the impact can be mitigated:	Low
Proposed mitigation:	As per the VIA but key measures include: - Develop in phases - Rehabilitate and revegetate as soon as possible - Plant trees within the development at the earliest opportunity
Cumulative impact post mitigation:	Low
Significance rating of impact after mitigation (Low, Medium, Medium-High, High, or Very-High)	Low

6.2. Operation Phase

6.2.1. Impacts to the cultural landscape

Direct impacts to the cultural landscape would occur during the operation phase due to the existence of the new development in the landscape. It is expected that construction will continue for several years as the erven fill up, but this will be small scale work. The main issue is how the development fits into the landscape. An impact significance of **medium negative** is expected before mitigation (Table 4). Key mitigation measures will be the preparation and implementation of a landscape plan and a building design manual. These will ensure that the development sits comfortably in the wider landscape by softening edges and creating a unified atmosphere. Visually permeable fencing should be used with trees and hedges planted for privacy. To mitigate nighttime impacts, outdoor lighting needs to be appropriately designed to minimise light spillage. The landscape plan would need to be implemented during the construction phase in order to reduce operation phase impacts. With mitigation the impact significance is expected to drop to **low negative**. It is also acknowledged that, with time, the development will become an accepted part of the landscape. The VIA rates the impact significance for change in visual character as **medium-high negative** before mitigation and **medium-low negative** after mitigation. Specifically in relation to the N2 scenic route their rating is **medium-low negative** both before and after mitigation.

There are no fatal flaws in terms of operation phase impacts to the cultural landscape.

Table 4: Assessment of operation phase impacts to the cultural landscape.

Potential impacts on the cultural landscape	
Nature and status of impact:	Direct, negative
Extent and duration of impact:	Local, long term
Intensity	Medium
Probability of occurrence:	Definite
Degree to which the impact can be reversed:	High
Degree to which the impact may cause irreplaceable loss of resources:	Low
Cumulative impact prior to mitigation:	Low
Significance rating of impact prior to mitigation (Low, Medium, Medium-High, High, or Very-High)	Medium
Degree to which the impact can be mitigated:	Low
Proposed mitigation:	<ul style="list-style-type: none"> - Use visually permeable fencing - Plant trees along streets and project boundary as early as possible (subject to landscape plan). - Compile and implement building design manual. - Outdoor lighting to minimise light spillage.
Cumulative impact post mitigation:	Low
Significance rating of impact after mitigation (Low, Medium, Medium-High, High, or Very-High)	Low

6.3. Existing impacts to heritage resources

There are currently no obvious threats to heritage resources on the site aside from the natural degradation, weathering and erosion as well as ploughing that will affect archaeological materials. Trampling from grazing animals and/or farm/other vehicles could also occur. These impacts would be of **negligible negative** significance. The cultural landscape is a generally rural one, but the site lies within the urban edge and other development has occurred in recent years to its east. These have not resulted in much change to the wider landscape as they have been adjacent to the edge of the existing settlement. The impact significance of this town expansion has likely been **low negative**.

6.4. Cumulative impacts

In relation to an activity, cumulative impact “means the past, current and reasonably foreseeable future impact of an activity, considered together with the impact of activities associated with that activity, that in itself may not be significant, but may be significant when added to the existing and reasonably foreseeable impacts eventuating from similar or diverse activities” (NEMA EIA Reg GN R982 of 2014).

In this instance the primary development that occurs in the area is urban expansion for various reasons. This is a slow, incremental expansion responding to the needs of the population. The proposed development is essentially more of the same and is not likely to have a significant cumulative impact on heritage resources. The main issue is the landscape and N2 scenic route, but the N2 passes through the town anyway, which means this expansion will be extending an existing

impact and is of **low negative** significance. Mitigation will be the same as for the individual impacts and centres on the implementation of a landscape plan and building design manual with the aim of ensuring that the development sits comfortably within the landscape.

6.5. Evaluation of impacts relative to sustainable social and economic benefits

Section 38(3)(d) of the NHRA requires an evaluation of the impacts on heritage resources relative to the sustainable social and economic benefits to be derived from the development.

The proposed development is responding to the needs of the growing town of Riversdale. Housing is a basic human right and the provision of new residential areas is thus a benefit. Furthermore, the development will provide construction period jobs and it is likely that many domestic and other work opportunities would also arise during the operation phase. These are clear economic and social benefits and, if mitigation is applied as suggested above, then the socio-economic benefits outweigh the residual impacts.

6.6. The No-Go alternative

If the project were not implemented then the site would stay as it currently is (impact significance of **neutral**). Although the heritage impacts with implementation would be greater than the existing impacts, the loss of socio-economic benefits is more significant and suggests that the No-Go option is less desirable in heritage terms.

6.7. Levels of acceptable change

Any impact to an archaeological or palaeontological resource or a grave is deemed unacceptable until such time as the resource has been inspected and studied further if necessary. Impacts to the landscape are difficult to quantify but in general a development that visually dominates the landscape from many publicly accessible vantage points is undesirable. Although the proposed development would dominate foreground views along the adjacent part of the N2, it will be less visible from further away to the east and not visible from the west. Mitigation measures will help it to fit comfortably in the landscape and ensure that it is not an unacceptable change.

7. INPUT TO THE ENVIRONMENTAL MANAGEMENT PROGRAMME

The actions recorded in Table 5 should be included in the environmental management programme (EMPr) for the project.

Table 5: Heritage considerations for inclusion in the EMPr.

Impact	Mitigation / management objectives & outcomes	Mitigation / management actions	Monitoring		
			Methodology	Frequency	Responsibility
Impacts to archaeology, fossils and graves					
Damage or destruction of archaeological artefacts	Avoid impacts (preferred) or locate and sample or rescue sites before disturbance	<u>Planning & Construction Phase</u> : Pre-construction survey and artefact collection/description during dry season , under approved HWC Workplan.	Appoint archaeologist to conduct survey well before construction	Once-off	Project developer
Damage or destruction of fossils	Rescue information and fossils before extensive damage occurs	<u>Construction Phase</u> : Implement HWC Fossil Chance Finds Procedure (see attached). Reporting chance finds as early as possible to HWC or palaeontologist.	Inform staff to be vigilant and carry out inspections of new excavations	- Ongoing basis - Whenever on site (at least weekly during construction phase only)	- Construction Manager or Contractor - ECO
Damage or destruction of graves	Rescue burials before extensive damage occurs	<u>Construction Phase</u> : Reporting chance finds as early as possible to HWC or an archaeologist, protect in situ and stop work in immediate area.	Inform staff to be vigilant and carry out inspections of new excavations	- Ongoing basis - Whenever on site (at least weekly during construction phase only)	- Construction Manager or Contractor - ECO
Impacts to the cultural landscape					
Intrusion into cultural landscape	Minimise visual contrast	<u>Planning Phase</u> : Compile landscape plan and building design manual.	Monitor that this has been done.	Once-off	Project developer
Visible landscape scarring	Minimise landscape scarring	<u>Construction Phase</u> : Ensure disturbance is kept to a minimum and does not exceed project requirements. Rehabilitate areas not needed during operation.	Monitoring of surface clearance relative to approved layout	- Ongoing basis - As required	- Construction Manager or Contractor - ECO
Intrusion into cultural landscape	Minimise visual contrast	<u>Construction and Operation Phases</u> : Implement landscape plan. Compile and implement building design manual.	Monitor that this has been considered in the design and operation of the facility	Once off	Project Developer

8. CONSULTATION WITH HERITAGE CONSERVATION BODIES

As required by HWC in their response to the NID, the report was sent to the municipality and Simon Van Der Stel Foundation Southern Cape for comment as part of the PPP. The report also forms part of the public participation process (PPP) conducted under NEMA. Any heritage-related responses will be communicated to HWC.

9. CONCLUSIONS

The main concern for this project is visual impacts to the cultural landscape. It has been determined that with mitigation there will be no highly significant impacts. Importantly, the building density reduces as one moves further from the existing townscape which allows for a more gradual transition from urban to rural land. The socio-economic benefits of the project are substantial and contribute to the overall desirability of it. Archaeology is a minor concern, since impacts can be very easily mitigated. Although the associated services were not examined in the field, this can be easily dealt with during the pre-construction phase via a recommendation and this limitation is of no concern. Visibility was poor during the survey, but indications are that ESA resources may be present and that some collection/description of the artefacts is warranted prior to development. It will be critical that this work is carried out during the dry season when visibility is good and the developer needs to bear this in mind if the project proceeds to construction. Because of the poor context and good understanding of the nature of the resource, it is suggested that a Workplan application can be submitted to HWC prior to the site visit so that just one visit can be done.

Table 6: *Heritage indicators and project responses.*

Indicator	Project Response
Uncontrolled damage to fossils should be minimised as far as possible.	HWC Fossil Chance Finds Procedure to be implemented.
Uncontrolled damage to archaeological resources should be minimised as far as possible.	Impacts to be determined during pre-construction survey.
If they cannot be avoided, significant archaeological resources should not be damaged or destroyed without appropriate further study.	Collection of artefacts to occur during pre-construction survey if deemed appropriate.
The cultural landscape should not be dominated by the proposed development as seen from publicly accessible viewpoints.	Tree planting will help the development merge with the surroundings. It will only be highly visible from close proximity and is not expected to dominate views from further afield.
The development should not be imposed on the landscape but should fit comfortably into it.	The project has been designed within the constraints imposed by the site boundaries, the neighbouring development proposals and the need to fit in with future development layouts. The lowest density has been placed on the highest part of the site and along the outer (western) edge of the development which

	allows the denser parts in the east to relate better to the existing urban fabric of Riversdale. This is acceptable.
Tree-planting with appropriate species to be implemented along streets and external boundaries according to landscape plan.	Landscape plan is recommended and must be approved by HWC.
Areas with the greatest bulk should be positioned closer to the existing town and away from the N2.	This has been done. Although one group housing site adjoins the N2, it is on the end of the study area closest to the existing urban fabric. This is acceptable.
No buildings to be taller than double story.	Development rights do not allow more than double story.
Vernacular architectural language should be employed throughout the development with the main focus being on gabled buildings with pitched roofs. Lean-to attachments and outbuildings may have flat roofs. Large blank walls, tall glazed surfaces and columns (among other things) should be avoided.	Architectural design manual is recommended and must be approved by HWC.
Garages to be placed behind line of house façade.	To be addressed in architectural manual.
Building walls to be largely white or earthy colours. Accent walls in face-brick or stone are acceptable.	To be addressed in architectural manual.
Roofs to be green or dark in colour. Thatch is also acceptable.	To be addressed in architectural manual.
N2 interface and all 1 ha erven to have permeable boundary treatment with trees and hedges for privacy.	To be addressed in architectural manual and landscape plan.
Non-permeable boundary treatment to be minimised elsewhere in the development.	To be addressed in architectural manual.
An architectural design manual should be prepared that formalises the above and provides separately for each of the categories of development. A degree of commonality will allow for a sense of unity at the larger scale, but the focus should be on allowing enough flexibility in individual designs to avoid uniformity. The architectural guidelines should promote overall design sensitivity rather than being a set of restrictive conditions and will assist with the safeguarding of the region's scenic resources.	Architectural design manual is recommended and must be approved by HWC.

The VIA proposes mitigation measures which were in fact taken on board by the developer during the course of the assessment and, in its conclusion, the VIA (page 55) states that the current layout, LP11, is appropriate and supported.

There are no specific areas that need avoidance or buffering, with a visual buffer already included in the design along the N2.

9.1. Reasoned opinion of the specialist

Given that (1) the proponent has responded to layout concerns raised, (2) the final layout (LP11) addresses these concerns and has been approved by the visual consultant, and (3) the archaeological concerns can be easily addressed through a pre-construction survey, it is the opinion of the heritage consultant that the project may be authorised in full.

10. RECOMMENDATIONS

It is recommended that the proposed development be authorised, but subject to the following recommendations which should be included as conditions of authorisation:

- The HWC Fossil Chance Finds Procedure must be included in the EMPr;
- An archaeologist must be contracted to survey the urban development site and all associated services footprints during the dry season when no wheat is growing to record and/or collect artefacts as deemed appropriate. This must be done under an approved Workplan;
- An architectural design guideline manual must be developed, approved by HWC, and implemented. This must address main buildings, outbuildings and fencing for each development type and should aim to prohibit inappropriate architectural elements and create a degree of unity while allowing enough variability to allow unique designs;
- A landscape Plan must be developed, approved by HWC, and implemented. This should focus mainly on perimeter and street planting with a view towards softening the development's appearance in the rural landscape;
- Tree-planting should commence as early as possible during the construction phase;
- Visually permeable fencing must be implemented as far as possible, but especially along the N2 with vegetation used for privacy screening;
- Outdoor lighting must be designed to minimise light spillage; and
- If any archaeological material or human burials are uncovered during the course of development then work in the immediate area should be halted. The find would need to be reported to the heritage authorities and may require inspection by an archaeologist. Such heritage is the property of the state and may require excavation and curation in an approved institution.

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APPENDIX 1 – Curriculum Vitae



Curriculum Vitae

Jayson David John Orton

ARCHAEOLOGIST AND HERITAGE CONSULTANT

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Address: 40 Brassie Street, Lakeside, 7945
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Birth date and place: 22 June 1976, Cape Town, South Africa
Citizenship: South African
ID no: 760622 522 4085
Driver's License: Code EB
Marital Status: Married to Carol Orton
Languages spoken: English, Afrikaans, basic French

Education:

SA College High School	Matric	1994
University of Cape Town	B.A. (Archaeology, Environmental & Geographical Science)	1997
University of Cape Town	B.A. (Honours) (Archaeology) [First Class]	1998
University of Cape Town	M.A. (Archaeology)	2004
University of Oxford	D.Phil. (Archaeology)	2013

Employment History:

Spatial Archaeology Research Unit, UCT	Research assistant	Jan 1996 – Dec 1998
Department of Archaeology, UCT	Field archaeologist	Jan 1998 – Dec 1998
UCT Archaeology Contracts Office	Field archaeologist	Jan 1999 – May 2004
UCT Archaeology Contracts Office	Heritage & archaeological consultant	Jun 2004 – May 2012
School of Archaeology, University of Oxford	Undergraduate Tutor	Oct 2008 – Dec 2008
ACO Associates cc	Associate, Heritage & archaeological consultant	Jan 2011 – Dec 2013
ASHA Consulting (Pty) Ltd	Director, Heritage & archaeological consultant	Jan 2014 –

Professional Accreditation:

- Association of Southern African Professional Archaeologists (ASAPA) membership number: 233
- ASPA CRM Section member with the following accreditation:
 - Principal Investigator: Coastal shell middens (awarded 2007)
Stone Age archaeology (awarded 2007)
Grave relocation (awarded 2014)
 - Field Director: Rock art (awarded 2007)
Colonial period archaeology (awarded 2007)
- Association of Professional Heritage Practitioners (APHP) membership number: 43
 - Accredited Professional Heritage Practitioner

Memberships and affiliations:

➤ South African Archaeological Society Council member	2004 – 2016
➤ Assoc. Southern African Professional Archaeologists (ASAPA) member	2006 –
➤ UCT Department of Archaeology Research Associate	2013 – 2017
➤ Heritage Western Cape APM Committee member	2013 – 2023
➤ UNISA Department of Archaeology and Anthropology Research Fellow	2014 –
➤ Fish Hoek Valley Historical Association	2014 –
➤ Kalk Bay Historical Association	2016 –
➤ Association of Professional Heritage Practitioners member (CRM Section)	2016 –
➤ Southern African Field Archaeology section editor	2021 –

Fieldwork and project experience:

I have extensive experience as Field Director and Principal Investigator throughout Western and Northern Cape, and the western Free State and Eastern Cape. I also work in the eastern part of South Africa through partnership with an Iron Age accredited colleague.

Feasibility studies:

Heritage feasibility studies examining all aspects of heritage from the desktop

Phase 1 surveys and impact assessments:

- | | |
|---|--|
| ➤ Project types | ➤ Development types |
| ○ Notification of Intent to Develop applications | ○ Mining and borrow pits |
| ○ Heritage Impact Assessments | ○ Roads (new and upgrades) |
| ○ Self-standing assessments under Section 38(1) of the NHRA | ○ Residential, commercial and industrial development |
| ○ Assessments under NEMA and Section 38(8) of the NHRA | ○ Agricultural developments |
| ○ Archaeological specialist studies | ○ Dams and pipe lines |
| ○ Strategic assessments | ○ Power lines and substations |
| ○ Phase 1 archaeological test excavations in historical and prehistoric sites | ○ Renewable energy facilities (wind, solar and hydro-electric) |
| ○ Archaeological research projects | |

Phase 2 mitigation and research excavations:

- | | |
|-----------------------------|--|
| ➤ ESA open sites | ○ Duinefontein, Gouda, Namaqualand |
| ➤ MSA rock shelters | ○ Fish Hoek, Yzerfontein, Cederberg, Namaqualand |
| ➤ MSA open sites | ○ Swartland, Bushmanland, Namaqualand |
| ➤ LSA rock shelters | ○ Cederberg, Namaqualand, Knersvlakte, Bushmanland |
| ➤ LSA open sites (inland) | ○ Swartland, Franschhoek, Namaqualand, Bushmanland, De Aar |
| ➤ LSA coastal shell middens | ○ Melkbosstrand, Yzerfontein, Saldanha Bay, Paternoster, Dwarskersbos, Infanta, Knysna, Namaqualand coast, Knersvlakte |
| ➤ LSA burials | ○ Melkbosstrand, Saldanha Bay, Namaqualand coast, Knysna |
| ➤ Historical sites | ○ Waterfront (fort, dump and well), Noordhoek (cottage), variety of small excavations in central Cape Town and surrounding suburbs |
| ➤ Historic burial grounds | ○ Green Point (Prestwich Street), V&A Waterfront (Marina Residential), Paarl, Beaufort West, Franschhoek (farmstead and well), Paarl, De Aar |

Awards:

1998: Frank Schweitzer memorial book prize for an outstanding student.

2015/2016: Western Cape Government Cultural Affairs Awards: Best Heritage Project.

APPENDIX 2 – Fossil Chance Finds Procedure

HWC PROCEDURE: CHANCE FINDS OF PALAEONTOLOGICAL MATERIAL

Introduction

This document is aimed to inform workmen and foremen working on a construction and/or mining site. It describes the procedure to follow in instances of accidental discovery of palaeontological material (please see attached poster with descriptions of palaeontological material) during construction/mining activities. This protocol does not apply to resources already identified under an assessment undertaken under s. 38 of the National Heritage Resources Act (no 25 of 1999).

Fossils are rare and irreplaceable. Fossils tell us about the environmental conditions that existed in a specific geographical area millions of years ago. As heritage resources that inform us of the history of a place, fossils are public property that the State is required to manage and conserve on behalf of all the citizens of South Africa. Fossils are therefore protected by the National Heritage Resources Act and are the property of the State. Ideally, a qualified person should be responsible for the recovery of fossils noticed during construction/mining to ensure that all relevant contextual information is recorded.

Heritage Authorities often rely on workmen and foremen to report finds, and thereby contribute to our knowledge of South Africa's past and contribute to its conservation for future generations.

Training

Workmen and foremen need to be trained in the procedure to follow in instances of accidental discovery of fossil material, in a similar way to the Health and Safety protocol. A brief introduction to the process to follow in the event of possible accidental discovery of fossils should be conducted by the designated Environmental Control Officer (ECO) for the project, or the foreman or site agent in the absence of the ECO. It is recommended that copies of the attached poster and procedure are printed out and displayed at the site office so that workmen may familiarise themselves with them and are thereby prepared in the event that accidental discovery of fossil material takes place.

Actions to be taken

One person in the staff must be identified and appointed as responsible for the implementation of the attached protocol in instances of accidental fossil discovery and must report to the ECO or site agent. If the ECO or site agent is not present on site, then the responsible person on site should follow the protocol correctly in order to not jeopardize the conservation and well-being of the fossil material.

Once a workman notices possible fossil material, he/she should report this to the ECO or site agent.

Procedure to follow if it is likely that the material identified is a fossil:

- i The ECO or site agent must ensure that all **work ceases** immediately in the vicinity of the area where the fossil or fossils have been found;
- ii The ECO or site agent must **inform HWC of the find immediately**. This information must include photographs of the findings and GPS co-ordinates;
- iii The ECO or site agent must compile a **Preliminary Report and fill in the Fossil Discoveries: HWC Preliminary Record Form** within 24 hours without removing the fossil from its original position. The **Preliminary Report** records basic information about the find including:
 - The date
 - A description of the discovery
 - A description of the fossil and its context (e.g. position and depth of find) Where and how the find has been stored
 - Photographs to accompany the preliminary report (the more the better):
 - A scale must be used
 - Photos of location from several angles Photos of vertical section should be provided
 - Digital images of hole showing vertical section (side);
 - Digital images of fossil or fossils.
- iv Upon receipt of this **Preliminary Report**, HWC will inform the ECO or site agent whether or not a rescue excavation or rescue collection by a palaeontologist is necessary.
- v **Exposed finds must be stabilized where they are unstable and the site capped, e.g. with a plastic sheet or sand bags.** This protection should allow for the later excavation of the finds with due scientific care and diligence. HWC can advise on the most appropriate method for stabilization.
- vi If the find cannot be stabilized, **the fossil may be collect with extreme care** by the ECO or the site agent and put aside and protected until HWC advises on further action. Finds collected in this way must be safely and securely stored in tissue paper and an appropriate box. Care must be taken to remove the all fossil material and any breakage of fossil material must be avoided at all costs.

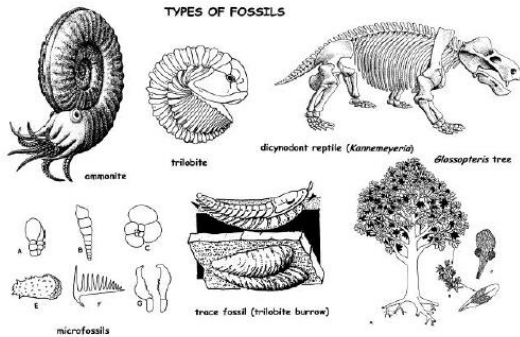
No work may continue in the vicinity of the find until HWC has indicated, in writing, that it is appropriate to proceed.

FOSSIL DISCOVERIES: HWC PRELIMINARY RECORDING FORM		
Name of project		
Name of fossil location		
Date of discovery		
Description of situation in which the fossil was found:		
Description of context in which the fossil was found:		
Description and condition of fossil identified:		
GPS coordinates:	Lat:	Long:
If no co-ordinates available then please describe the location:		
Time of discovery:		
Depth of find in hole:		
Photographs (tick as appropriate and indicate number of the photograph)	Digital image of vertical section (side)	
	Fossil from different angles	
	Wider context of the find	
Temporary storage (where it is located and how it is conserved)		
Person identifying the fossil	Name:	
	Contact:	
Recorder:	Name:	
	Contact:	
Photographer	Name:	
	Contact:	

Palaeontology: what is a fossil?

Fossils are the traces of ancient life (animal, plant or microbial) preserved within rocks and come in two forms:

- Body fossils preserve parts, casts or impressions of the original tissues of an organism (e.g. bones, teeth, wood, pollen grains); and
- Trace fossils such as trackways and burrows record ancient animal behaviour.



How to report chance fossil finds: What should I do if I find a fossil during construction/mining?

If you think you have identified a fossil:

Immediately inform the ECO or Site Agent. He/she will then contact HWC and write a report and if necessary operations will stop in that specific area until the fossil is recovered



Types of palaeontological finding - What does a fossil look like?

Fossils vary in size, from fossilised tree trunks and dinosaur bones down to very small animals or plants.

Finds can be **individual fossils** (one isolated wood log or bone) or **clusters and beds** (several bones, teeth, animal or plant remains, trace fossils in close proximity or bones resembling part of a skeleton). A bed of fossils is a layer with many fossil remains.

Below there is a list of few examples of fossils which may be identified during excavations in the Western Cape.

Image	Description	Image	Description
	Leaves		Snail shells and other shells
	Fossil wood		Bones of larger animals
	The remains of fish and marine life (e.g. teeth, scales, starfish)		Large burrows made by moles and other animals
	Stromatolites		Traces made by burrowing insects (ants, wasps, dung-beetles etc.).
	Animal footprints		

Images provided by Dr John Almond

Text by HWC's Archaeology, Palaeontology & Meteorites Committee June 2016



APPENDIX 3 – Visual Impact Assessment