APPENDIX G3

HERITAGE IMPACT ASSESSMENT

HERITAGE IMPACT ASSESSMENT: PROPOSED REHABILITATION AND UPGRADING OF THE TRUNK ROAD 28 SECTION 2 (TR28/2) BETWEEN STANFORD AND HERMANUS, WESTERN CAPE

(Assessment conducted under Section 38 (8) of the
National Heritage Resources Act No 25 of 1999.
Case No: 130603ZS01E)

Prepared for:
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October 2013

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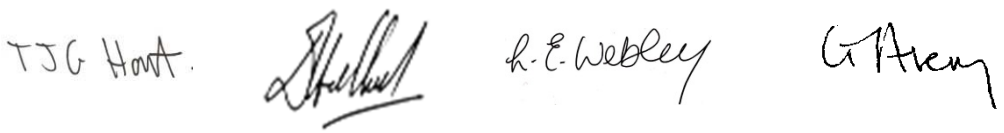
SPECIALIST DECLARATION:

We, Tim Hart, David Halkett, Lita Webley and Graham Avery as the appointed independent specialists hereby declare that we:

- acted as the independent specialist in this application;
- regard the information contained in this report as it relates to our specialist input/study to be true and correct, and
- do not have and will not have any financial interest in the undertaking of the activity, other than remuneration for work performed in terms of the NEMA, the Environmental Impact Assessment Regulations, 2010 and any specific environmental management Act;
- have and will not have no vested interest in the proposed activity proceeding;
- have disclosed, to the applicant, EAP and competent authority, any material information that have or may have the potential to influence the decision of the competent authority or the objectivity of any report, plan or document required in terms of the NEMA, the Environmental Impact Assessment Regulations, 2010 and any specific environmental management Act;
- am fully aware of and meet the responsibilities in terms of NEMA, the Environmental Impact Assessment Regulations, 2010 (specifically in terms of regulation 17 of GN No. R. 543) and any specific environmental management Act, and that failure to comply with these requirements may constitute and result in disqualification;
- have ensured that information containing all relevant facts in respect of the specialist input/study was distributed or made available to interested and affected parties and the public and that participation by interested and affected parties was facilitated in such a manner that all interested and affected parties were provided with a reasonable opportunity to participate and to provide comments on the specialist input/study;
- have ensured that the comments of all interested and affected parties on the specialist input/study were considered, recorded and submitted to the competent authority in respect of the application;
- have ensured that the names of all interested and affected parties that participated in terms of the specialist input/study were recorded in the register of interested and affected parties who participated in the public participation process;
- have provided the competent authority with access to all information at my disposal regarding the application, whether such information is favourable to the applicant or not; and
- are aware that a false declaration is an offence in terms of regulation 71 of GN No. R. 543.

Signature of the specialists:



Name of Company:	ACO Associates cc; G Avery Independent Palaeontological Consultant.
Professional Registration (Incl. number):	
Date:	11 February 2014

EXECUTIVE SUMMARY

ACO Associates cc was appointed by CCA Environmental (Pty) Ltd, on behalf of the Western Cape Government: Department of Transport and Public Works, to assess the potential impacts to heritage of the proposed rehabilitation and upgrade of the Trunk Road 28 Section 2 (TR28/2) between Hermanus and Stanford in the Western Cape.

The most significant alterations, from a heritage perspective, would take place at four localities along the TR28/2, namely:

- Road realignment and the construction of a new bridge over the Vogelgat River;
- Road realignment and the construction of a new bridge over the Klein River;
- The extension of the existing service road below the TR28/2;
- The construction of a traffic circle outside Stanford at the intersection of the R43, the R326 and Victoria Road; and
- The repositioning of farm access roads onto the TR28/2 may require slight realignment of farm access roads.

Notice of Intent to Develop was submitted to Heritage Western Cape in June 2013 and the Interim Comment (Case No: 130603ZS01E) has called for an HIA "consisting of an archaeological study and palaeontological study with an integrated set of recommendations and the completed studies appended in full".

The following heritage indicators were identified:

- **Palaeontology** – Dr Graham Avery has prepared the Palaeontological Impact Assessment (Appendix 1). He has advised that the upgrade is not located in a known palaeontologically sensitive area and the possibility of recovering palaeontological material is small. No records of fossils from this area occur in the Iziko Museums of South Africa. There is a very small likelihood that fossils may occur if there are deep cuttings into the Bokkeveld Group rocks, into calcretes deposits and in the alluvium deposits along the Klein River. The likelihood of an impact on palaeontology is expected to be improbable;

- **Archaeology** – Dr Lita Webley and Mr David Halkett have prepared the Archaeological Impact Assessment (Appendix 2). The existing road reserve represents an altered landscape which has already been artificially levelled. Any *in situ* archaeological material has already been moved from its original context and is no longer of high significance. A survey of the road reserve, at selected locations, revealed no archaeological material. The likelihood of an impact on archaeological resources is expected to be improbable;

- **Built Environment** – There are no historic buildings in close proximity to the existing road reserve and the upgrade of the road, would not impact negatively on the Built Environment. The Vogelgat Bridge and the Klein River Bridge are both younger than 60 years, and they are not considered of historical significance. No permits will be required to demolish them. However, there is an historic shed (older than 60 years) which is located in proximity to the proposed service road;

- **Graves -** No graves or cemeteries were observed during the brief survey.

- **Cultural Landscape** – The route between Stanford and Hermanus can be considered a scenic route of high significance; while the landscape can be described as a Natural Landscape of high significance. The impact with respect to the replacement of the Vogelgat Bridge and the Klein River Bridge are considered to be mainly of a visual nature. Poorly designed bridges which intrude on the visual qualities of the landscape would have a negative impact. The proposed bridges would be similar to the existing structures but slightly larger and higher, resulting in a better view of the lagoon.

- The present four-way stop outside Stanford is cluttered with unsightly road signs and does not present an attractive entrance to the village. The sensitive design of a traffic circle at Stanford will present an opportunity to enhance the approach to the town.

Impact Assessment

Potential impact	Significance	
	Without mitigation	With mitigation
Palaeontology	Very Low	Very Low
Archaeology	Very Low	Very Low
Built environment	Very Low	Insignificant
Graves and cemeteries	Low	Very Low
Cultural/Natural Landscape	Low	Very Low

All interested and affected parties have already been consulted as part of the EIA consultation process. In addition to this, comments were elicited from the Hermanus Aesthetics and Heritage Conservation Committee, the Stanford Conservation Trust and Stanford Heritage Committee on the 2 May 2013 and 26 September 2013 and their opinions are awaited.

Mitigation

- With regard palaeontology, Avery (Appendix 1) has recommended that bulk earthworks and deep excavations, specifically in the vicinity of the Klein River Bridge, be monitored by a palaeontologist or archaeologist. The necessity and frequency of this is to be determined *a priori* with the contractor once the final design has been completed;
- Geo-technical information together with the proposed locations and depths of other excavations should be provided to the palaeontologist or archaeologist prior to the commencement of construction to enable a better estimation of the time needed for monitoring;
- Protocols for dealing with palaeontological/palynological (fossil pollens) monitoring and possible further mitigation must be included in the Environmental Management Programme (EMP). These protocols include the following:
  - > Apply to Heritage Western Cape (HWC) for a permit to collect (disturb) palaeontological material prior to construction commencement.
  - > The palaeontologist shall instruct the Contractor's Environmental Officer in basic fossil/sub-fossil recognition and the procedure to be adopted if any material is exposed. Procedures shall include:
    - Stop work in that area immediately;
    - The isolation and protection of any area in which palaeontological material is exposed;
    - Report the findings to the palaeontologist immediately. He / she will advise whether material may be removed by the Environmental Officer or must await the presence of the palaeontologist; and
    - Notify HWC and undertake the necessary recording and recovery of palaeontological material.
  - > Should any human remains be disturbed, exposed or uncovered during excavation, these shall immediately be reported the South African Police Service and, if suspected that the remains are older than 60 years, the HWC (tel 021 462 4502).
- Any fossil material recovered must be lodged in the collections of Iziko South African Museum; funds must be available *a priori* to cover costs of fieldwork and one date should the need arise;
- No archaeological mitigation is required;
- With regard the Built Environment, it is recommended that the shed identified during the survey is fenced off from the work area and considered a no-go area. This will ensure that there are no accidental impacts,

Conclusions

There are no significant impacts to palaeontology or archaeology as a result of the road alignment at the bridges, temporary bypasses, farm access roads and the traffic circle at Stanford and there is therefore no preferred alternative from a heritage perspective. All alternatives are expected to be of the same significance.

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1. INTRODUCTION

ACO Associates cc was appointed by CCA Environmental (Pty) Ltd, on behalf of the Western Cape Government: Department of Transport and Public Works, to assess the potential impacts to heritage of the proposed rehabilitation and upgrading of Trunk Road 28 Section 2 (TR28/2) between Hermanus and Stanford in the Western Cape (Figure 1).

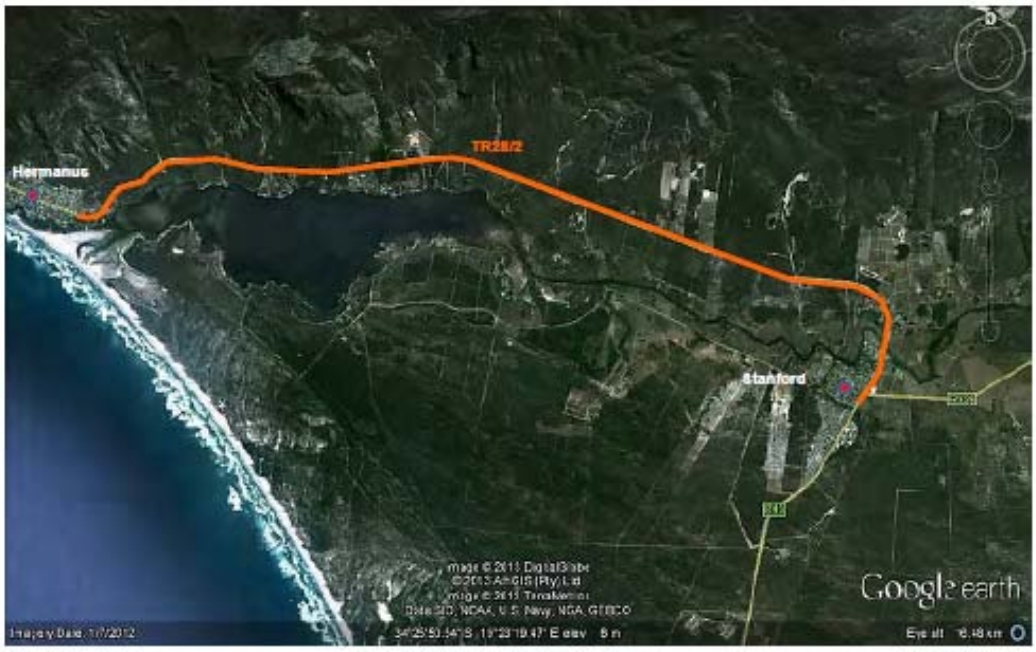

Figure 1: An aerial map showing the location of the study area between Hermanus and Stanford and the section of the TR28/2 under consideration in orange (after Google Earth).

1.1 Development Proposals

The TR28/2 is a major tourist route between two important tourist destinations in the Overberg. The current influx into the area, particularly at certain times of the year, has placed a strain on the existing road infrastructure, which is old and requires upgrading. The proposed rehabilitation and upgrading of the road forms part of the Overstrand Spatial Development Framework (SDF).

The majority of the proposed rehabilitation and upgrading of TR28/2 would be confined to within the existing 30 m road reserve. The following measures have been proposed to improve the road:

- Upgrade the road cross-section by adding 2 m surfaced shoulders on the outside of two 3.7 m lanes;
- Re-alignment of sections of the road to construct new bridges at the Vogelgat River and Klein River. It is proposed to replace the Vogelgat Bridge some 800 m to the south of the existing bridge and to realign the Klein River Bridge to the west of the existing alignment to facilitate a large enough bridge opening;
- Rehabilitate existing road surface;

- Improve access safety by closing unsafe and illegal intersections. The repositioning of farm accesses in some instances requires the slight realignment of farm access roads;
- The upgrading and extension of the existing proclaimed service road, which is located parallel and south of the TR28/2, between SV 9 800 and SV 15 150 . This road would also serve as a bypass during construction; and
- The construction of a traffic circle outside Stanford and the intersection of the R43, the R326 and Victoria Road.

The most significant alterations, from a heritage perspective, would take place at four localities along the TR28/2, namely:

- Road realignment and the construction of a new bridge over the Vogelgat River (Figure 2);
- Road realignment and the construction of a new bridge over the Klein River (Figure 3);
- The extension of the existing service road below the TR28/2 (Figures 4&5);
- The construction of a traffic circle outside Stanford and the intersection of the R43, the R326 and Victoria Road (Figure 6).

The construction of the new bridges would result in the deposition and/or excavation and removal of more than 5 m^3 of material.

2. TERMS OF REFERENCE

The Heritage Impact Assessment was undertaken in three phases:

- Completion of a Notice of Intent to Develop (NID) for Heritage Western Cape;
- A baseline description containing an assessment of threats and opportunities; and
- A heritage assessment including proposed mitigation.

3. LEGISLATIVE REQUIREMENTS

The National Heritage Resources Act, No 25 of 1999 (NHRA) (Section 38 (1)) makes provision for a compulsory notification of the intent to development when any development exceeding 5000 m^2 in extent, or any road or linear development exceeding 300m in length is proposed.

The NHRA provides protection for the following categories of heritage resources:

- Landscapes, cultural or natural (Section 3 (3))
- Buildings or structures older than 60 years (Section 34);
- Archaeological Sites, palaeontological material and meteorites (Section 35);
- Burial grounds and graves (Section 36);
- Public monuments and memorials (Section 37); and
- Living heritage (defined in the Act as including cultural tradition, oral history, performance, ritual, popular memory, skills and techniques, indigenous knowledge systems and the holistic approach to nature, society and social relationships) (Section 2 (d) (xxi)).

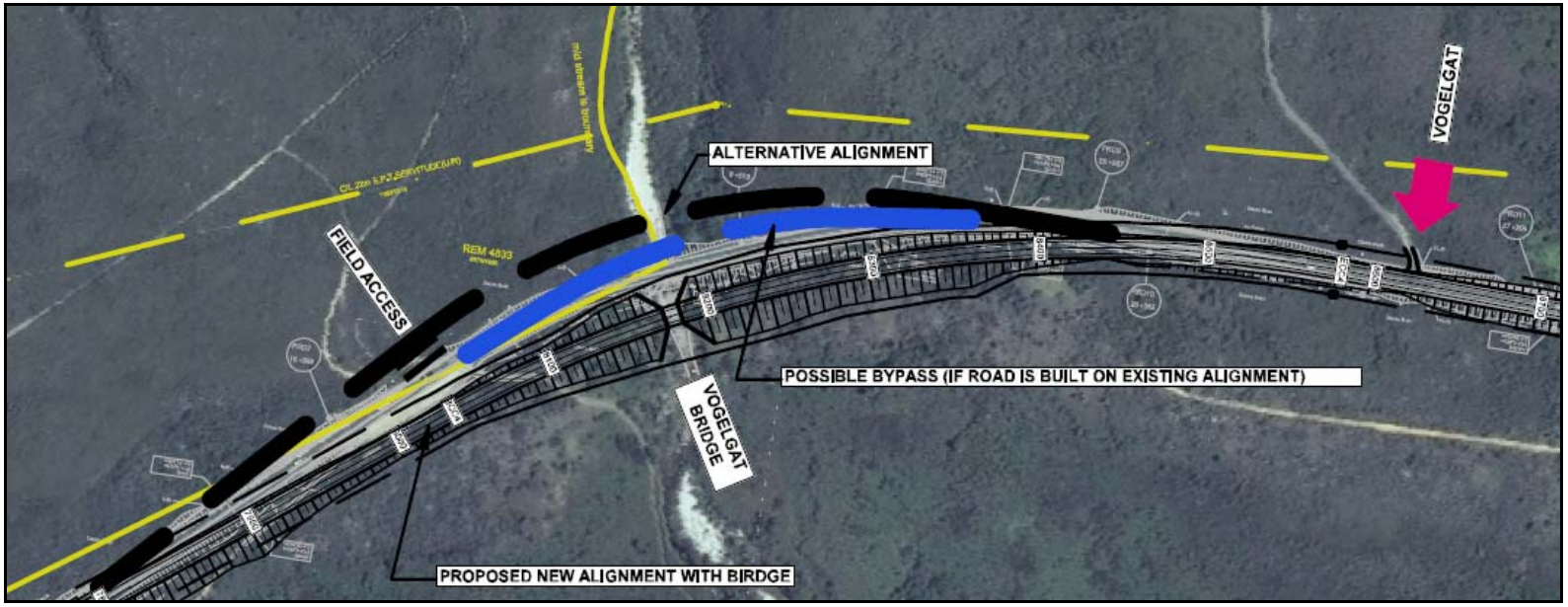

Figure 2: Proposed alternative new alignments over the Vogelgat River.

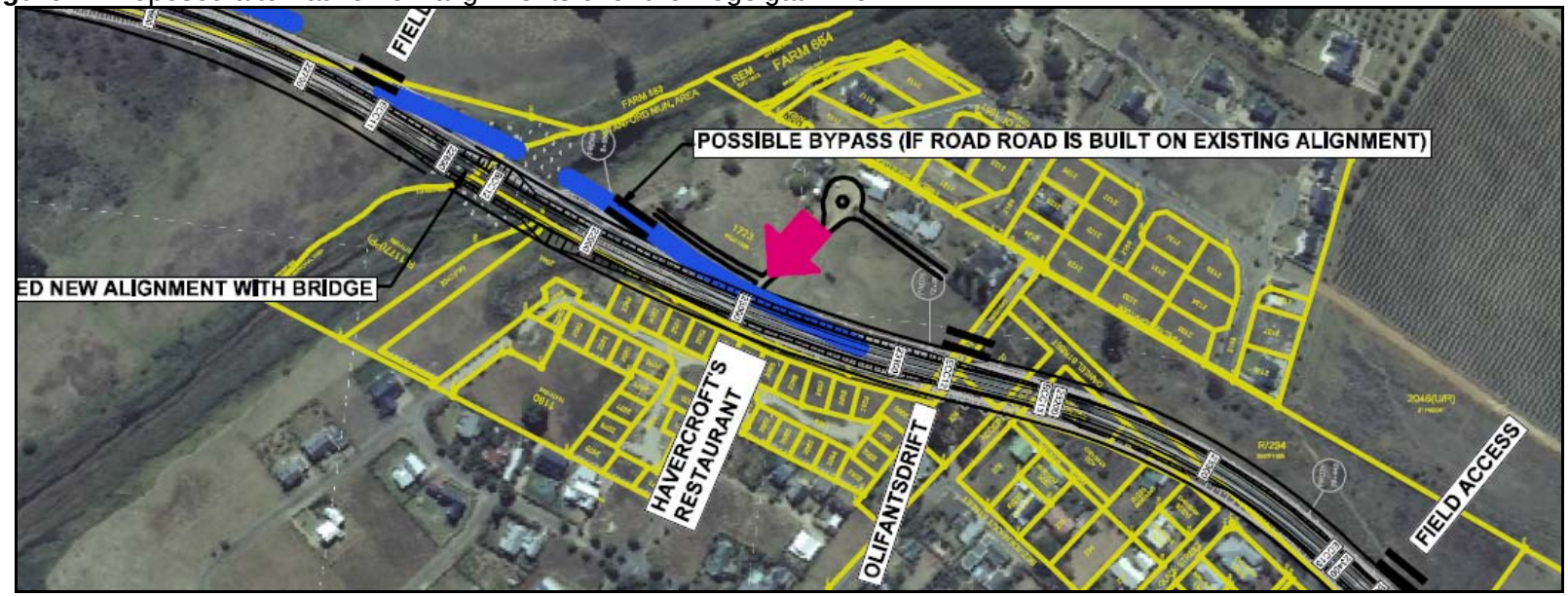

Figure 3: Proposed alternative new alignments over the Klein River.

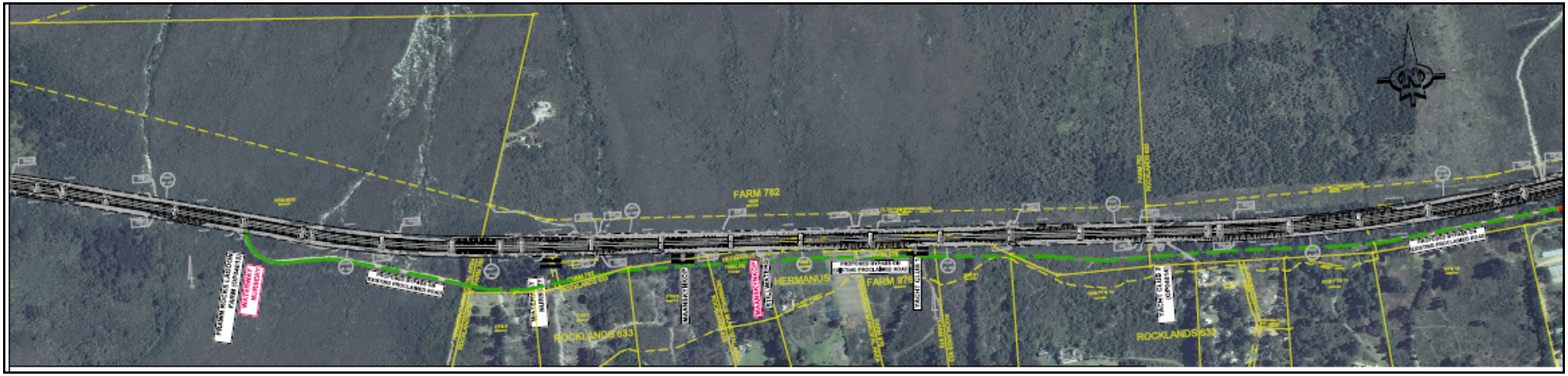

Figure 4: The existing service road below the TR28/2

Figure 5: The proposed extension of the existing service road.

Figure 6: Proposed traffic circle at the entrance to Stanford.

With respect to the Cultural Landscape, Section 3 (2) (d) of the NHRA, No 25 of 1999, states that the national estate may include "landscapes and natural features of cultural significance".

Legislation requires that Heritage Western Cape (HWC) is notified of any proposed development which falls within the boundaries of the province through the submission of Notice of Intent to Develop (NID).

A NID was submitted on and the following interim comment (Case No: 130603ZS01E) received on the 3 July 2013: *"Since there is reason to believe that heritage resources will be impacted upon, HWC requires an HIA in terms of S. 38(3) of the NHRA (Act 25 of 1999) consisting on an archaeological study and a palaeontological study. An integrated set of recommendations needs to be included and the completed studies attached in full".*

In terms of this particular Heritage Impact Assessment, HWC is an important commenting authority but is not responsible for final compliance as this study forms part of a Basic Assessment process for which the Department of Environment Affairs and Development Planning is the compliance authority (in terms of section 38.10 of the National Heritage Resources Act).

4. RECEIVING ENVIRONMENT

The road between Hermanus and Stanford follows the margins of the Hermanus lagoon/Klein River estuary.

There are numerous agricultural properties, small holdings, holiday resorts and several nature reserves/conservancies along the route.


Plate 1: View of the lagoon.

Plate 2: View of the Vogelgat Bridge which would be replaced by realigning the road to the south of the existing alignment (preferred alternative).

Plate 3: View of the Klein River Bridge which would be replaced with a new bridge on a new alignment to the west of the existing bridge (preferred alternative).

Plate 3: View of the intersection at Stanford which would be replaced with a traffic circle.

4.1 Palaeontology

The Palaeontological Impact Assessment was completed by Dr Graham Avery and is included as Appendix 1.

Briefly, Avery reports that the proposed upgrade does not occur in a palaeontologically sensitive area. Based on the geology of the area, and the finds in the Iziko Museums of South Africa, the palaeontological potential along the route of the upgrade is limited. The following geological features may be fossiliferous:

- Alluvium along the Klein River may hold palaeontological and/or palynological (plant remains, including pollens) material in peaty and other sediments.
- Calcretes, which probably hold the greatest potential, may include well-preserved fossils.
- Should the Bokkeveld Group rocks be encountered, they may include well-preserved fossils.

4.2 Archaeology

The Archaeological Impact Assessment was completed by Lita Webley and David Halkett and is appended as Appendix 2.

Very little archaeological work has been carried out in this particular area. Most of the archaeological research which has been conducted in this section of the southern Cape has been concentrated along the coast (see Hart 2010). A number of sites have been recorded along the rocky shoreline near Hermanus by Kaplan (2007). These are primarily Later Stone Age shell middens. Early and Middle Stone Age artefacts scatters have been recorded on the Hermanus Golf Club and at the Fernkloof Nature Reserve.

4.3 Historical Background

The Khoekhoen herders were the dominant groups of people in the Overstrand region when the Dutch East India Company started extending their interests beyond the Cape Peninsula in 17th century. The Chainoqua, who occupied the Caledon plains, traded regularly with VOC (Verenigde Oostindische Compagnie) outposts but the demands of the VOC for cattle eventually resulted in their collapse as an independent group. Eventually nomadic European stock farmers and professional hunters moved into the area – they were the forerunners of permanent colonial settlement.

In the 18th century the Dutch East India Company began to “formalise” the process of granting farms in the area. Stock posts were granted east of Hermanus by the 1730’s while the first hunting licences were granted in the Baardskeerdersbos area by 1706.

In 1830 Hermanus Pieters set up camp at the fresh water spring at the end of the Oliphantspad, which ran from the Hemel and Aarde Leper Insitute, across the mountains to the sea. In 1854, a number of plots were surveyed opposite the freshwater spring to the north-west of Marine Drive. The village was formally proclaimed in 1855. A voter’s roll of 1903 shows that about 60% of the inhabitants of Hermanus were fishermen. By 1904 Hermanus was declared a Municipality. According to the Overstrand Heritage Survey (Draft Report 2009) the history of

Hermanus is one of dispossession. The “Coloured” fishermen who remained living close to the old harbour were evicted in terms of the Group Areas Act in the late 1950’s and early 1960’s and moved to the existing settlement of Mount Pleasant. The remaining core of central Hermanus has been subject to a strong process of gentrification.

The history of Stanford originates from an original grant of the town Klein Riviers Valley to Cristoffel Brand by the British government in 1801. One of the owners built a small water mill for grinding wheat along a stream feeding the Klein River of the farm. In 1838, the farm was sold to Robert Stanford who built a larger mill on the site. The first plots of the new village were auctioned in 1856 and incorporated the farmhouse and mill. The original village comprised 165 large erven of which 97 obtained the rights for use of the water from the leiwater channels to grow fruit, vegetables and flowers. The water for the leiwater channels emanate from the overflow of a spring, “die Oog”, to the southeast. The village was structured along a gridiron pattern in relation to the river and the Market Square. The Archaeology Contracts Office (2002) recorded a number of historic structures on the farm Wortelgat to the south of the Kleinriviersvalei.

The application of the Group Areas Act resulted in the relocation of many inhabitants to an area to the south of the town. By the latter half of the 20th century, the road from Hermanus to Gansbaai bypassed the town. A number of newcomers settled in the town and were responsible for having the centre of the town declared a Conservation Area in 1996 (Overstrand Heritage Survey Draft Report 2009).

4.4 Cultural Landscape

According to the Overstrand Heritage Survey (2009), both Stanford and Hermanus comprise unique aesthetic environments situated between the mountains (Kleinrivierberge) and the sea. The road which links the two towns can be considered a scenic route of high significance.

The road and service road pass through Overberg Sandstone Fynbos and Elim Ferricrete Fynbos, both of which are critically endangered, and Agulhas Limestone Fynbos, which is vulnerable. The landscape can be considered a Natural Landscape of high significance. There are, however, numerous agricultural properties, small holdings, holiday resorts and several nature reserves/conservancies along the route.

5. METHODOLOGY

A site survey was conducted on the 23 April 2013 by Lita Webley and David Halkett prior to the completion of the NID. The survey included a drive-down along the route, and an examination of the proposed areas where substantial road works may impact on heritage, such as the Vogelgat River, the Klein River and the entrance into Stanford. Digital photographs were taken of the environment and GPS tracks were recorded (see Appendix 2).

Since the proposed development falls within the boundaries of the Western Cape Province, a NID was submitted to HWC. They issued an Interim Comment requesting a Heritage Impact Assessment including a Palaeontological and Archaeological Impact Assessment with an integrated set of recommendations.

In addition to the EIA process of public consultation, the designs of the two new bridges and the new traffic circle outside of Stanford were submitted to the Hermanus

Aesthetics and Heritage Conservation Committee and the Stanford Conservation Trust and Stanford Heritage Committee on the 2 May and 26 September 2013 for their comment.

A baseline report, based on the initial engineers' proposals, was completed assessing the potential impacts to the heritage. The revised engineers' plans are based on the recommendations in the baseline report.

The assignment of impacts is those set out by CCA Environmental.

5.1 Limitations

Part of the proposed development would take place on private land and permission had not yet been obtained from all the landowners to undertake the survey. Selected areas along the route were examined. This is not considered to be a significant limitation and no further site investigation is deemed necessary.

6. IMPACT ASSESSMENT

The site visit was conducted with a view to identifying any heritage resources which might be negatively impacted by the proposed project (and associated alternatives).

6.1 Palaeontology

Dr Graham Avery was consulted with respect to the palaeontology (Appendix 1). He advised that it is unlikely that road works between Hermanus and Stanford would impact on below-ground fossil material.

The only impacts anticipated with respect to palaeontology, may result from deep cuttings into alluvium along the Klein River (which may hold palaeontological and/or palynological material in peaty and other sediments); calcretes which may include well-preserved fossils and Bokkeveld Group rocks which may also include well-preserved fossils.

Deep excavations may occur during construction for the new Vogelgat and Klein River bridges as well as a number of cuttings along the route related to improvements in the vertical alignment of the road. The likelihood of this occurring is very low.

Table 1: Table of heritage impact assessment: Palaeontology

CRITERIA	WITHOUT MITIGATION	WITH MITIGATION
Extent	Local	Local
Duration	Permanent	Permanent
Intensity	Low	Low
Probability	Improbable	Improbable
Confidence	High	High
Significance	Very Low	Very Low
Cumulative impact	None	None

Nature of Cumulative impact	There will be no further cumulative impacts.
Degree to which impact can be reversed	The destruction of palaeontological resources cannot be reversed.
Degree to which impact may cause irreplaceable loss of resources	The palaeontological resources are of very low heritage significance. However, the loss would be permanent (i.e. irreversible). However, excavations into sediments not normally accessible to palaeontologists provide opportunities to recover potentially-important fossil material that enables observations to be made on geology, past sea levels, climates, environments and biodiversity, which would otherwise be impossible
Degree to which impact can be mitigated	There is no need to undertake any mitigation. However, Avery recommends: 1. Limited monitoring of bulk earthworks (specifically in the vicinity of the Klein River Bridge) but this would need to be arranged between the palaeontologist and contractor before work starts; 2. Geo-technical information together with the proposed locations and depths of other excavations should be provided to the palaeontologist or archaeologist prior to the commencement of construction to enable a better estimation of the time needed for monitoring; 3. Protocols for dealing with palaeontological/palynological (fossil pollens) monitoring and possible further mitigation must be included in the Environmental Management Programme (EMP). Protocols are listed below; and 4. Any fossil material recovered must be lodged in the collections of Iziko South African Museum.

There are no constraints with respect to palaeontology.

Palaeontological Points for the EMP

- Apply to Heritage Western Cape (HWC) for a permit to collect (disturb) palaeontological material prior to construction commencement;
- The palaeontologist shall instruct the Contractor's Environmental Officer in basic fossil/sub-fossil recognition and the procedure to be adopted if any material is exposed. Procedures shall include:
  - > Stop work in that area immediately;
  - > The isolation and protection of any area in which palaeontological material is exposed;
  - > Report the findings to the palaeontologist immediately. He / she will advise whether material may be removed by the Environmental Officer or must await the presence of the palaeontologist; and
  - > Notify HWC and undertake the necessary recording and recovery of palaeontological material.
- Should any human remains be disturbed, exposed or uncovered during excavation, these shall immediately be reported the South African Police Service and, if suspected that the remains are older than 60 years, the HWC (tel 021 462 4502);
- Any fossil material recovered must be lodged in the collections of Iziko South African Museum; funds must be available *a priori* to cover costs of fieldwork and one date should the need arise.

6.2 Archaeology

The existing road reserve represents an altered landscape which has already been artificially levelled. Any *in situ* archaeological material has been moved from its original context. An examination of the road reserve during an on-site visit revealed no archaeological material.

Table 2: Table of heritage impact assessment: Archaeology

CRITERIA	WITHOUT MITIGATION	WITH MITIGATION
Extent	Local	Local
Duration	Permanent	Permanent
Intensity	Low	Low
Probability	Improbable	Improbable
Confidence	High	High
Significance	Very Low	Very Low
Cumulative impact	None	None
Nature of Cumulative impact	There will be no further cumulative impacts.	
Degree to which impact can be reversed	The destruction of archaeological resources cannot be reversed.	
Degree to which impact may cause irreplaceable loss of resources	The archaeological resources are of very low heritage significance. However, the loss would be permanent (i.e. irreversible).	
Degree to which impact can be mitigated	There is no need to undertake any mitigation.	

There are no constraints with respect to archaeology.

6.3 Built environment

There are no historic buildings in close proximity to the existing road reserve and the upgrade of the road would not impact negatively on the built environment.

The Vogelgat Bridge and the Klein River Bridge are both younger than 60 years, and they are not considered of historical significance. No permits would be required to demolish them.

However, the proposed service road, which is located to the south of the existing road, may, although unlikely, impact on an old shed which is located approximately 50m from the road. Impacts may occur due to accidental damage or demolition. The shed appears to have some historic characteristics and be older than 60 years.

Plate 4: An old shed located about 50 m south of the road, in close proximity to the proposed service road. The inset shows that the old shed is located close to the small dam (below Site X002) near the proposed service road.

Shed:
S 34.405020
E 19.364538

The extension to the existing service road must avoid direct impacts to the shed.

Table 3: Table of heritage impact assessment: Built Environment

CRITERIA	WITHOUT MITIGATION	WITH MITIGATION
Extent	Local	Local
Duration	Permanent	Permanent
Intensity	Low	Zero
Probability	Improbable	Improbable
Confidence	High	High
Significance	Very Low	Insignificant
Cumulative impact	None	None

Nature of Cumulative impact	There will be no further cumulative impacts.
Degree to which impact can be reversed	The destruction of built environment resources cannot be reversed.
Degree to which impact may cause irreplaceable loss of resources	There are very few built environment resources of any significance along this route and the proposed alterations to the road are unlikely to result in permanent loss of heritage.
Degree to which impact can be mitigated	It is recommended that the shed is fenced off from the work area and considered a no-go area. This would ensure that there are no accidental impacts.

6.4 Graves/cemeteries

No graves or cemeteries were observed during the brief survey. Unmarked, pre-colonial burials may occur beneath the soil surface, and care should be undertaken during excavations for the road.

Table 4: Table of heritage impact assessment: Graves/Cemeteries

CRITERIA	WITHOUT MITIGATION	WITH MITIGATION
Extent	Local	Local
Duration	Permanent	Permanent
Intensity	Low	Low
Probability	Improbable	Improbable
Confidence	High	High
Significance	Low	Very Low
Cumulative impact	None	None
Nature of Cumulative impact	There will be no further cumulative impacts.	
Degree to which impact can be reversed	The destruction of graves/cemeteries cannot be reversed.	
Degree to which impact may cause irreplaceable loss of resources	No graves/cemeteries were recorded along this route and the proposed alterations to the road are unlikely to result in and impacts. There is a very small likelihood that unmarked, pre-colonial graves may be impacted.	
Degree to which impact can be mitigated	Should any human remains be disturbed, exposed or uncovered during excavation, these shall immediately be reported the South African Police Service and, if suspected that the remains are older than 60 years, the HWC (tel 021 462 4502).	

There are no constraints with respect graves.

6.5 Cultural/Natural Landscape

The route between Stanford and Hermanus can be considered a scenic route of high significance; while the landscape can be described as a Natural Landscape of high significance.

The constraints with respect to the replacement of the Vogelgat Bridge and the Klein River Bridge are considered to be mainly of a visual nature. Depending on the design of the bridges, these may have a positive or a negative impact on the landscape qualities of the area. Poorly designed bridges which intrude on the visual qualities of the landscape would be a constraint, while bridges which blend in with the landscape could be considered an opportunity. The bridges will be similar in design to the existing bridges, except that they will be slightly larger and higher affording motorists a better view of the lagoon.

The present four-way stop outside Stanford is cluttered with unsightly road signs and does not present an attractive entrance to the village. The sensitive design of a traffic circle at Stanford may present an opportunity to enhance the approach to the town.

Table 5: Table of heritage impact assessment: Cultural/Natural Landscape

CRITERIA	WITHOUT MITIGATION	WITH MITIGATION
Extent	Local	Local
Duration	Permanent	Permanent
Intensity	Low	Low
Probability	Highly probably	Highly probable
Confidence	High	High
Significance	Low	Very Low
Cumulative impact	None	None
Nature of Cumulative impact	There will be no further cumulative impacts.	
Degree to which impact can be reversed	The destruction of heritage resources cannot be reversed. However, the impacts of the proposed bridges at the Vogelgat and Klein Rivers are likely to be neutral on the Cultural Landscape while the proposed traffic circle at Stanford will have a positive impact on the Cultural Landscape.	
Degree to which impact may cause irreplaceable loss of resources	The degree to which the impact may cause an irreplaceable loss of resource is low.	
Degree to which impact can be mitigated	The impact of the two proposed bridges on the Cultural Landscape will be neutral but the traffic circle at Stanford will have a positive impact on the Cultural Landscape. The comments in this regard of the Hermanus and Stanford heritage committees have been elicited and are awaited.	

7. CONCLUSIONS

This Heritage Impact Assessment has identified the heritage indicators along the route of the TR28/2 and assessed the impacts with respect to palaeontology and archaeology as requested in the Interim Comment issued by Heritage Western Cape (Case No: 130603ZS01E).

Although not specifically requested by HWC, consideration is also given to the built environment, graves and the cultural landscape, where appropriate.

The following mitigation measures are recommended:

- With regard palaeontology, Avery (Appendix 1) has recommended that bulk earthworks and deep excavations, specifically in the vicinity of the Klein River Bridge, be monitored by a palaeontologist or archaeologist. The necessity and frequency of this is to be determined *a priori* with the contractor once the final design has been completed;
- Geo-technical information together with the proposed locations and depths of other excavations should be provided to the palaeontologist or archaeologist prior to the commencement of construction to enable a better estimation of the time needed for monitoring;
- Protocols for dealing with palaeontological/palynological (fossil pollens) monitoring and possible further mitigation must be included in the Environmental Management Programme (EMP). These protocols include the following:
  - > Apply to Heritage Western Cape (HWC) for a permit to collect (disturb) palaeontological material prior to construction commencement.
  - > The palaeontologist shall instruct the Contractor's Environmental Officer in basic fossil/sub-fossil recognition and the procedure to be adopted if any material is exposed. Procedures shall include:
    - Stop work in that area immediately;
    - The isolation and protection of any area in which palaeontological material is exposed;
    - Report the findings to the palaeontologist immediately. He / she will advise whether material may be removed by the Environmental Officer or must await the presence of the palaeontologist; and
    - Notify HWC and undertake the necessary recording and recovery of palaeontological material.
  - > Should any human remains be disturbed, exposed or uncovered during excavation, these shall immediately be reported the South African Police Service and, if suspected that the remains are older than 60 years, the HWC (tel 021 462 4502);
- Any fossil material recovered must be lodged in the collections of Iziko South African Museum; Funds must be available *a priori* to cover costs of fieldwork and one date should the need arise.
- No archaeological mitigation is required; and
- With regard the Built Environment, it is recommended that the shed identified during the survey is fenced off from the work area and considered a no-go area. This will ensure that there are no accidental impacts.

There are no significant impacts to heritage related to the road alignment at the bridges and temporary bypasses and there is therefore no preferred alternative from a heritage perspective. All alternatives are expected to be of the same significance.

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APPENDIX 1

Palaeontological Assessment Upgrade of R 43 Hermanus to Stanford (3419AD Stanford)

Prepared by

Graham Avery
(Sole Proprietor)

Archaeozoology, Stone Age Archaeology and Quaternary Palaeontology

October, 2013

Contents

Executive Summary

Graham Avery was commissioned by ACO cc (per Lita Webley) on behalf of their client (CCA Environmental) to conduct a desk top survey of the palaeontological potential of the proposed upgrade of the R43 between Hermanus and Stanford.

Applicant: Public Works	Western Cape Government: Department of Transport and
Proposed activity:	Road upgrade
Location:	R43 between Hermanus and Stanford, Hermanus Magisterial District

The proposed upgrade is not located in a known palaeontologically-sensitive area. Nevertheless, while encountering palaeontological material during the upgrade is unlikely, it remains possible, since any excavation for foundations and/or infrastructure that penetrates into underlying sediments may encounter fossils. The Bokkeveld Group rocks and more-recent calcareous sediments of the region are known to yield fossils and any excavation into or through them during the upgrade should be considered to have potential. Any excavation into alluvium should be considered similarly.

Based on its geology and regional finds in Iziko Museums of South Africa collections, there may be limited palaeontological potential along the upgrade; the likelihood of this is small (i.e. improbable). Good communication with contractors and on-site monitoring during excavations would be required to minimise any potential loss.

Since such occurrences are rare, fossil finds would be significant and would require careful recording and possible systematic excavation by an appropriately-qualified palaeontologist. Excavations into sediments not normally accessible to palaeontologists should be seen as providing opportunities to recover potentially-important fossil material that would enable observations to be made about our past biodiversity and environments.

Prior communication, with an appropriately-qualified palaeontologist, once accurate details of the upgrade are known would help to establish whether monitoring would be necessary. **Impact is assessed to be of Very Low significance.**

Provided that the recommendations of this assessment are complied with, there is no palaeontological reason why the proposed development should not proceed.

Location of the Proposed Upgrade

The proposed upgrade is of the R43 between Hermanus and Stanford (1:50 000 topographical map 3419AD Stanford, Hermanus Magisterial District)**.** Detail is shown on Figures 1 and 2. The R43 is on the southern lower slopes of the Kleinriviersberge and runs along the northern shore of the Kleinriviersvlei, which is fed by the Kleinrivier, which crosses the R43 under a road bridge just before Stanford.

Figure 1. Google Earth view showing Hermanus and Stanford linked by R43.

Figure 2. Location of Hermanus, Stanford and section of R43 to be upgraded (between arrows).

Method

As requested, a desk top study of the proposed R43 upgrade was conducted by Dr G. Avery Archaeozoologist. The 1:250 00 Geological Series 3319 Worcester map and geological sources were consulted for background information.

The focus here has been to illustrate the nature and potential of sub-surface sediments through the geological context and observations in the general vicinity.

Results of the Study

Geology and Lithology

The geology is summarized from Schloms, Ellis et al. (1983); Sloman (1983); De Decker (1989); Johnson, Anhaeusser et al. (2009); Roberts, Botha et al. (2009) and 1:250 00 Geological Series 3319 Worcester. The surface geology of the area is shown in Figure 3. The area is bounded to the north by Palaeozoic Table Mountain Series (Opa-Ope, Ss, Sg) quartzitic sandstones of the Kleinriviersberge. These northern slopes, which extend down to the Kleinriviersvlei, comprise scree (T-Qt), derived from the mountains, and acidic duplex loam soils, which overlie alluvium. Mountain runoff has formed alluvial fan deltas, which comprise coarse sand and larger (gravel) clasts. Shale of the fossiliferous Bokkeveld Group (Dc, Dg, Dv), which overlies the TMS, occurs in the fertile valleys and may be exposed. Isolated Cape granite (N€hp) outcrops upslope and, the deep basal Malmesbury Group rocks (not exposed), are not fossiliferous and of no significance here.

South of the vlei aeolian cover sands (rehabilitated at the coast) of the Holocene (<12 ka) Strandveld Formation (Qb, Qg) are underlain by Quaternary calcified dunes of Middle to Late Pleistocene (>120 ka to 200ka) Waenhuiskrans Formation (Qw = semi-consolidated aeolian sand with comminuted shell and calcrete lenses; Qg = light grey to pale-red to red sandy soil and windblown sand).

Peaty deposits and alluvium may be associated with sediments around the vlei and at the Kleinrivier.

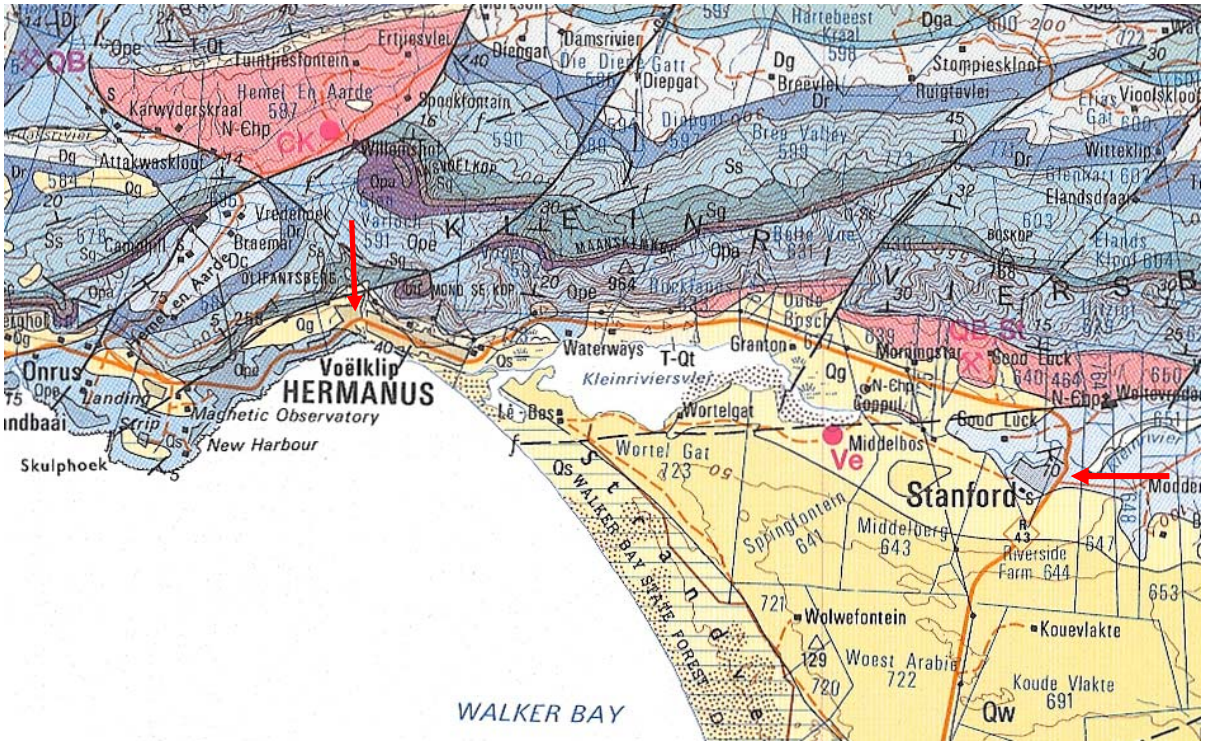

Figure 3. Surface geology excerpted from 1:250 000 Geological Series 3319 Worcester. The approximate locations of the sites are arrowed.

Palaeontological Potential

The proposed upgrade traverses palaeontologically unsensitive and potentially sensitive areas.

Rocks of the Table Mountain Group Malmesbury Group and Cape Granite are unlikely to include fossils. However, the Bokkeveld and Bredasdorp Groups do have potential. Sparse fossils occur in the Wankoe Formation that forms the roof of the Klipgat Cave near Die Kelders (G Avery pers. obs.) and Iziko South African Museum's Cenozoic Palaeontology section holds terrestrial vertebrate fossils from the Bokkeveld and Quaternary calcareous sediments of the Bredasdorp Group and archaeological sites in the area in its collection from Klipgat Cave, Byneskranskop, Linkerhandsegat, Windheuwel(Butzer 1979; Schweitzer 1979; Schweitzer and Wilson 1982; Avery, Cruz-Uribe et al. 1997; Klein and Cruz-Uribe 2000; Marean, Goldberg et al. 2000) and G Avery (pers. obs.). Alluvium along river courses, particularly The Klein River, may include terrestrial and molluscan fossils as well as wetland peaty deposits with pollen and other aquatic fossils. Any such find would be significant and would require appropriate recording and collection.

No reference to surface palaeontological material specifically along the R43 was found, although fossils have been recorded elsewhere in the region (see above). Palaeontological potential may be minimal, although it is not possible to exclude the possibility that fossils will be encountered. It is possible that fossils, sub-fossils or historical records of fauna of interest could be encountered during any excavation that cuts into any sub-surface sediments.

Small pockets of bone can occur, for instance, where bone accumulators like hyaenas, Jackals or porcupines used holes/burrows dug by aardvarks; older and younger sediments, too, may contain ancient wetland deposits and/or more-recent fossils (e.g. Linkerhandsegat, Windheuwel, Byneskranskop). The Middle Pleistocene fossil hyaena den at Swartklip in False Bay, is an excellent example of the value of such finds (Klein 1975). In addition to fossil bones and molluscs, there is the potential for encountering macro-plant remains and pollens of considerable age in wetland deposits. Thus, excavation into "softer" sediments that may occur along the upgrade route may intersect fossil-bearing deposits. If so, there is the potential to provide opportunities for observations not otherwise accessible to researchers.

Such probabilities could be better assessed if location of sub-surface infrastructure (e.g. foundations), and geotechnical information and details of the location and depth to which any excavations will extend, were available. They would greatly assist in estimating whether and where monitoring may be necessary during construction.

Although not near the proposed upgrade, Early and Middle Stone Age occurrences have been recorded in exposed surfaces of the Uilenkraal valley (as with the hyaena dens on Linkerhandsegat, Windheuwel and Byneskranskop). Information available suggests, however, that such occurrences are unlikely to be encountered along most of the proposed upgrade area.

Comments

Based on its geology and regional finds in Iziko Museums of South Africa collections, there may be limited palaeontological potential along the upgrade; the likelihood of this is improbable. Nevertheless, with limited information available on the recorded occurrence of fossils, good communication with contractors and on-site monitoring during excavations would be required to minimise any potential loss.

More systematic mitigation may be required if the context of any fossil material encountered warrants more than just recording and collection.

Conclusion

While no direct fossil evidence was found for the R43 upgrade area, this does not mean that potential is lacking. Excavations into sediments not normally accessible to palaeontologists provide opportunities to recover potentially-important fossil material that enables observations to be made on geology, past sea levels, climates, environments and biodiversity, which would otherwise be impossible.

- Alluvium along the Klein River may hold palaeontological and/or palynological (plant remains, including pollens) material in peaty and other sediments.
- Calcretes, which probably hold the greatest potential, may include well-preserved fossils.
- Should the Bokkeveld Group rocks be encountered, they may include well-preserved fossils

Palaeontological remains are often rare and, if encountered, must be recorded by an appropriately qualified person. As examples of potential, the richness of the globally important Langebaanweg (West Coast Fossil Park) fossil landscape (Hendey 1981) and the Swartklip hyaena accumulation (Klein 1975) and their important contributions to knowledge should not be lost sight of.

Given the known palaeontological potential of the area, mitigationary action, beyond simple recording and recovery during monitoring, including the possibility of systematic excavations, while unlikely, may be necessary.

Provided that the recommendations in this report are followed, current information indicates that the proposed upgrade would not impact significantly on palaeontological remains. Appropriately conducted the upgrade may provide opportunities to access rare fossil material and to better understand the local geological sequence.

Impacts

Impact is likely to be insignificant. Calcareous outcrops and alluvial sediments hold the greatest potential.

Table 1: Table of heritage impact assessment: Palaeontology

CRITERIA	WITHOUT MITIGATION	WITH MITIGATION
Extent	Local	Local
Duration	Permanent	Permanent
Intensity	Low	Low
Probability	Improbable	Improbable
Confidence	High	High
Significance	Very Low	Very Low
Cumulative impact	None	None

Nature of Cumulative impact	There will be no further cumulative impacts.
Degree to which impact can be reversed	The destruction of palaeontological resources cannot be reversed.
Degree to which impact may cause irreplaceable loss of resources	The palaeontological resources are unlikely to be found. However, any loss would be permanent (i.e. irreversible). Excavations into sediments not normally accessible to palaeontologists provide opportunities to recover potentially-important fossil material that enables observations to be made on geology, past sea levels, climates, environments and biodiversity, which would otherwise be impossible
Degree to which impact can be mitigated	There is no need to undertake any mitigation prior to construction. However, limited monitoring of bulk earthworks is recommended but this would need to be arranged between the palaeontologist and contractor before work starts.

There are no constraints with respect to palaeontology

Provided that the recommendations herein are adhered to the proposed development can be allowed to proceed from the palaeontological perspective.

Recommendations

1. Bulk earth works and deep excavations, specifically in the vicinity of the Klein River Bridge, should be monitored by a palaeontologist or archaeologist with appropriate palaeontological knowledge. The necessity and frequency of this is to be determined *a priori* with the contractor once the final design has been completed in order to minimize time spent on site.
2. If possible, geotechnical information together with the proposed locations and depths of other excavations should be provided to the palaeontologist or archaeologist prior to the commencement of construction. This may enable a better estimation of the time(s) when monitoring would be necessary.
3. Protocols for dealing with palaeontological/palynological (fossil pollens) monitoring and possible further mitigation must be included in the Environmental Management Plan (EMP) – the proposed protocols are listed in the section below.
4. Any fossil material recovered must be lodged in the collections of Iziko South African Museum.
5. Funds must be available *a priori* to cover costs of fieldwork and one date should the need arise.

Palaeontological Points for EMP

- All fossils are protected by law. Should anything of a palaeontological/palynological nature be found on site by the Contractor (or any other party), e.g. bones not

previously visible, work is to be stopped in that area immediately, and the Environmental Control Officer (ECO)/ Principal Agent notified. Failure to do so will result in a penalty and this must be carefully explained to workers during the Environmental Education Programme undertaken by the ECO.

- The ECO must advise on demarcation of this area and notify a relevant specialist (palaeontologist/archaeologist with appropriate experience) to view material and ascertain whether further study of the area is required.
- Should a specialist confirm a genuine fossil or sub-fossil and recommend further study of the area, work in the applicable area is to cease until further notice. Heritage Western Cape (HWC) is to be informed immediately by the ECO.
- Should any human remains be disturbed, exposed or uncovered during excavation, these shall immediately be reported the South African Police Service and, if suspected that the remains are older than 60 years, the SAHRA (tel 021 462 4502).
- The removal of discovered palaeontological remains, by a contracted specialist shall be at the Developer's expense. This will include the contingency to date one sample, if found.

Other mitigation for consideration:

> Apply to HWC for a permit to collect (disturb) palaeontological material prior to construction commencement.

> The palaeontologist shall instruct the Contractor's Environmental Officer in basic fossil/sub-fossil recognition and the procedure to be adopted if any material is exposed. Procedures shall include:

- the isolation and protection of any area in which palaeontological material is exposed; and
- report of the findings to the palaeontologist immediately. He / she will advise whether material may be removed by the Environmental Officer or must await the presence of the palaeontologist.

> Undertake the necessary recording and recovery of palaeontological material. This shall include:

- recording the occurrence with images, drawings and co-ordinates;
- collection, labelling and packaging of palaeontological material; and
- temporarily storage of palaeontological material to prevent damage, deterioration or loss.

> Submit recovered palaeontological material to the Iziko South African Museum, Natural History Collections Department (Cenozoic Studies).

Heritage Permits Required

The primary heritage legislation that needs to be considered is The South African Heritage Resources Act 25 of 1999 and regulations (details at www.sahra.org.za). All heritage material, including human burials, is included.

Clearance in terms of the National Heritage Act of 1999 will be required before the development can proceed. Locally, a permit will be required from the South African Heritage Resources Agency (SAHRA) and/or the Heritage Western Cape; in the event of a burial being

exposed. Potential delays could be minimized by obtaining a permit for the removal of palaeontological material before construction is initiated.

If human remains are encountered, the South African Heritage Resources Agency (SAHRA) must also be contacted immediately; no bones may be further moved until an archaeologist or appropriately-qualified palaeontologist has assessed them and permission (a separate permit) of SAHRA is granted. SAHRA must be contacted immediately through the appointed archaeologist and laid down procedures, including notification of the SAPS, must be followed.

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APPENDIX 2

ARCHAEOLOGICAL IMPACT ASSESSMENT: PROPOSED REHABILITATION AND UPGRADING OF THE TRUNK ROAD 28 SECTION 2 (TR28/2) BETWEEN STANFORD AND HERMANUS, WESTERN CAPE

(Assessment conducted under Section 38 (8) of the
National Heritage Resources Act No 25 of 1999.
Case No: 130603ZS01E)

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EXECUTIVE SUMMARY

ACO Associates cc was appointed by CCA Environmental (Pty) Ltd, on behalf of the Western Cape Government: Department of Transport and Public Works, to assess the potential impacts to archaeology of the proposed rehabilitation and upgrade of the Trunk Road 28 Section 2 (TR28/2) between Hermanus and Stanford in the Western Cape.

The most significant alterations, from an archaeological perspective, would take place at four localities along the TR28/2, namely:

- Road realignment and the construction of a new bridge over the Vogelgat River;
- Road realignment and the construction of a new bridge over the Klein River;
- The extension of the existing service road below the TR28/2;
- The construction of a traffic circle outside Stanford at the intersection of the R43, the R326 and Victoria Road; and
- The repositioning of farm access roads onto the TR28/2 may require slight realignment of farm access roads.

The following archaeological indicators were identified:

- **Archaeology** – The existing road reserve represents an altered landscape which has already been artificially levelled. Any *in situ* archaeological material has already been moved from its original context and is no longer of high significance. A survey of the road reserve, at selected locations, revealed no archaeological material.

Impacts and Mitigation:

- There are no significant impacts to archaeological related to the road alignment at the bridges, temporary bypasses and the traffic circle and there is therefore no preferred alternative from an archaeological perspective. All impacts are expected to be of **very low** significance and no mitigation is required.

1. INTRODUCTION

ACO Associates cc was appointed by CCA Environmental (Pty) Ltd, on behalf of the Western Cape Government: Department of Transport and Public Works, to assess the potential impacts to archaeology of the proposed rehabilitation and upgrading of Trunk Road 28 Section 2 (TR28/2) between Hermanus and Stanford in the Western Cape (Figure 1).

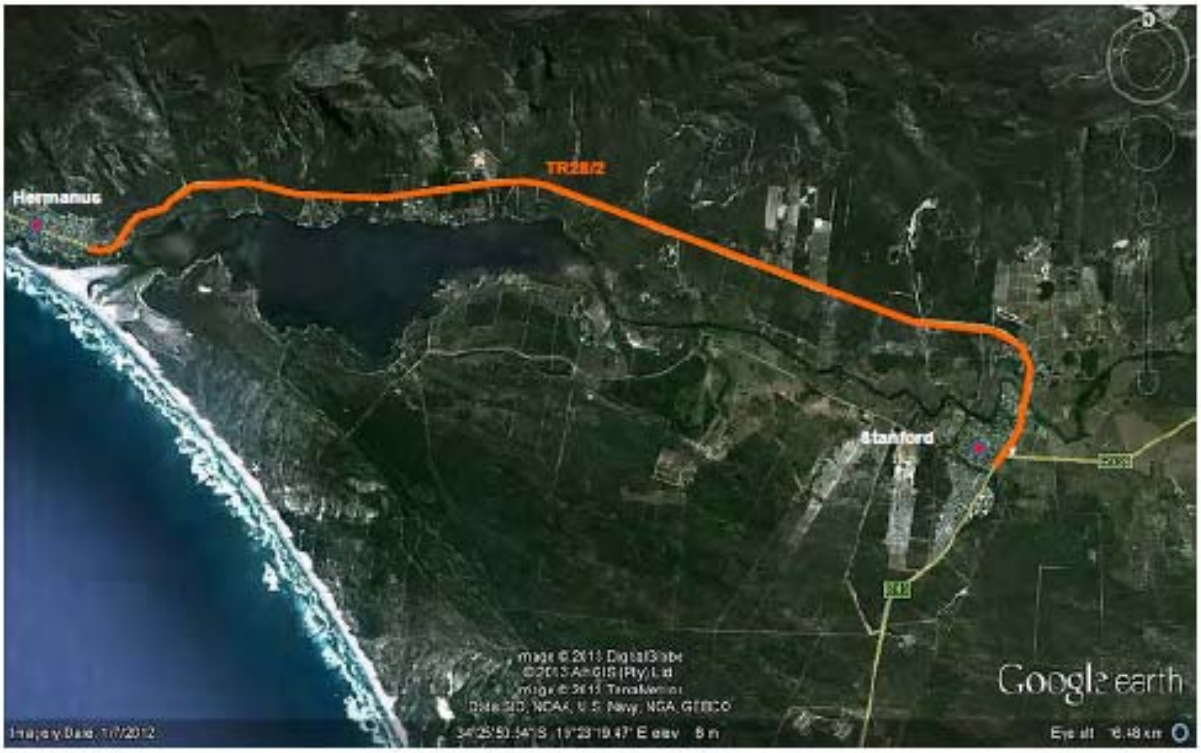

Figure 1: An aerial map showing the location of the study area between Hermanus and Stanford and the section of the TR28/2 under consideration in orange (after Google Earth).

1.1 Development Proposals

The TR28/2 is a major tourist route between two important tourist destinations in the Overberg. The current influx into the area, particularly at certain times of the year, has placed a strain on the existing road infrastructure, which is old and requires upgrading. The proposed rehabilitation and upgrading of the road forms part of the Overstrand Spatial Development Framework (SDF).

The majority of the proposed rehabilitation and upgrading of TR28/2 would be confined to within the existing 30 m road reserve. The following measures have been proposed to improve the road:

- Upgrade the road cross-section by adding 2 m surfaced shoulders on the outside of two 3.7 m lanes;
- Re-alignment of sections of the road to construct new bridges at the Vogelgat River and Klein River. It is proposed to replace the Vogelgat Bridge some 800 m to the south of the existing bridge and to realign the Klein River Bridge to the west of the existing alignment to facilitate a large enough bridge opening;
- Rehabilitate existing road surface;

- Improve access safety by closing unsafe and illegal intersections. This would include the upgrading and extension of the existing proclaimed service road, which is located parallel and south of the TR28/2, between SV 9 800 and SV 15 150. This road would also serve as a bypass during construction;
- The repositioning of farm access roads, which may require slight realignment of farm access roads, is only likely to have minimal impact.

The most significant alterations, from an *archaeological* perspective, would take place at three localities along the TR28/2, namely:

- Road realignment and the construction of a new bridge over the Vogelgat River (Figure 2);
- Road realignment and the construction of a new bridge over the Klein River (Figure 4);
- The extension of the existing service road below the TR28/2 (Figure 3);
- The construction of a traffic circle outside Stanford and the intersection of the R43, the R326 and Victoria Road (Figure 5);

The construction of the new bridges would result in the deposition and/or excavation and removal of more than 5 m^3 of material.

2. TERMS OF REFERENCE

The project has been approached in two phases:

- A baseline description containing an assessment of threats and opportunities; and
- An archaeological assessment including proposed mitigation.

3. LEGISLATIVE REQUIREMENTS

The National Heritage Resources Act, No 25 of 1999 (NHRA) (Section 38 (1)) makes provision for a compulsory notification of the intent to development when any development exceeding 5000 m^2 in extent, or any road or linear development exceeding 300m in length is proposed.

The NHRA provides protection for the following categories of heritage resources:

- Landscapes, cultural or natural (Section 3 (3))
- Buildings or structures older than 60 years (Section 34);
- Archaeological Sites, palaeontological material and meteorites (Section 35);
- Burial grounds and graves (Section 36);
- Public monuments and memorials (Section 37); and
- Living heritage (defined in the Act as including cultural tradition, oral history, performance, ritual, popular memory, skills and techniques, indigenous knowledge systems and the holistic approach to nature, society and social relationships) (Section 2 (d) (xxi)).

A Notice of intent to Develop (NID) was submitted on and the following interim comment (Case No: 130603ZS01E) received from Heritage Western Cape (HWC) on the 3 July 2013: *"Since there is reason to believe that heritage resources will be impacted upon, HWC requires an HIA in terms of S. 38(3) of the NHRA (Act 25 of 1999) consisting on an archaeological study and a palaeontological study. An integrated set of recommendations needs to be included and the completed studies attached in full".*

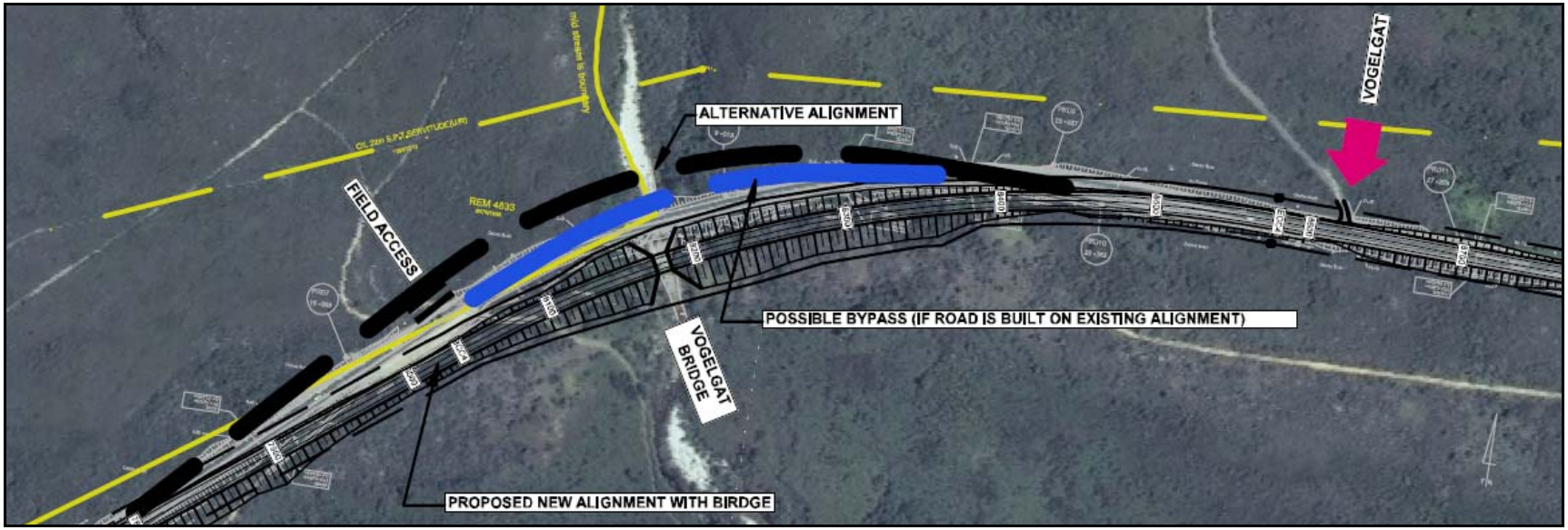

Figure 2 View of the alternative alignments proposed for the Vogelgat Bridge

Figure 3: Extension of the existing service road below the TR28/2

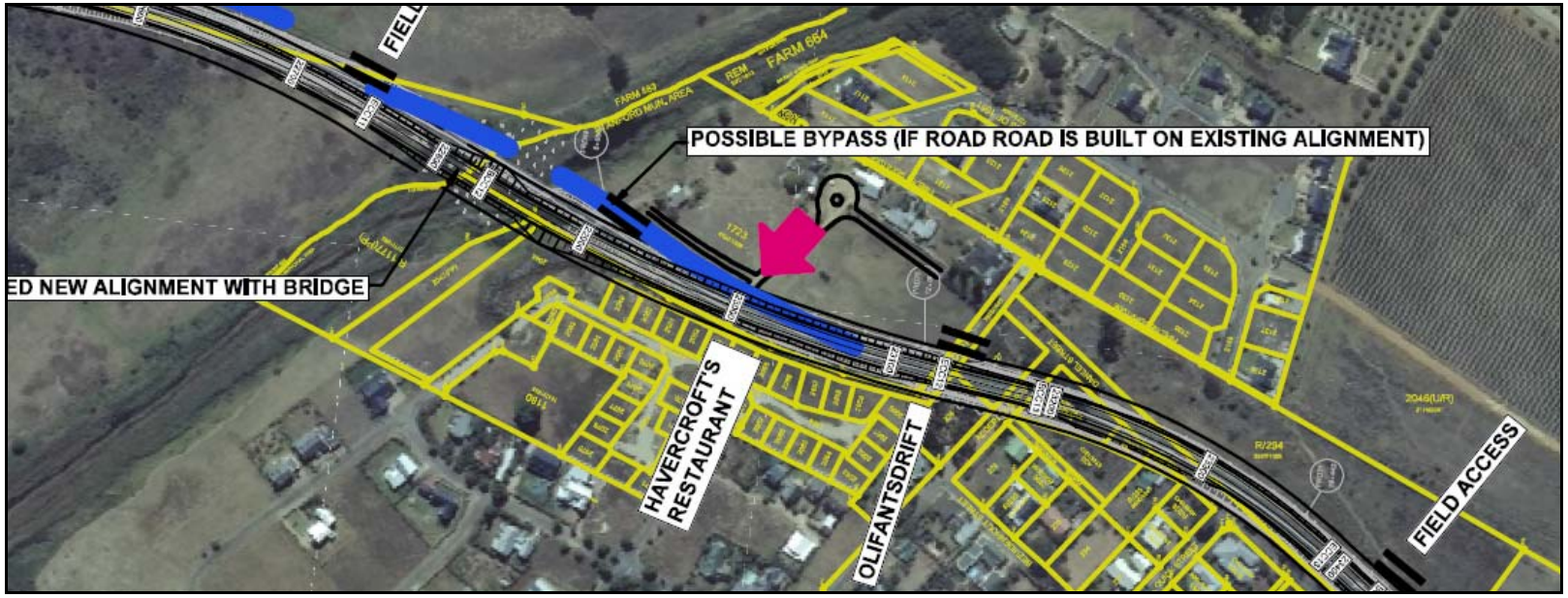

Figure 4: Proposed alternative alignments for the Klein Rivier Bridge.

Figure 5: The proposed traffic circle at Stanford.

In terms of this particular Heritage Impact Assessment, HWC is an important commenting authority but is not responsible for final compliance as this study forms part of a Basic Assessment or EIA process for which the Department of Environment Affairs and Development Planning is the compliance authority (in terms of section 38.10 of the NHRA).

4. RECEIVING ENVIRONMENT

The road between Hermanus and Stanford follows the margins of the Hermanus lagoon/Klein River estuary.

There are numerous agricultural properties, small holdings, holiday resorts and several nature reserves/conservancies along the route.

4.1 Archaeology

Very little archaeological work has been carried out in this particular area. Most of the archaeological research which has been conducted in this section of the southern Cape has been concentrated along the coast (see Hart 2010). A number have been recorded along the rocky shoreline near Hermanus by Kaplan (2007). These are primarily Later Stone Age shell middens. Early and Middle Stone Age artefacts scatters have been recorded on the Hermanus Golf Club and at the Fernkloof Nature Reserve.

The Khoekhoen herders were the dominant groups of people in the Overstrand region when the Dutch East India Company started extending their interests beyond the Cape Peninsula in 17th century. The Chainoqua, who occupied the Caledon plains, traded regularly with VOC (Verenigde Oostindische Compagnie) outposts but the demands of the VOC for cattle eventually resulted in their collapse as an independent group. Eventually nomadic European stock farmers and professional hunters moved into the area – they were the forerunners of permanent colonial settlement. However, no pastoralist sites have been recorded along this stretch of the landscape.

5. METHODOLOGY

A site survey was conducted on the 23 April 2013 by Lita Webley and David Halkett. A drive-down of the route was undertaken and the proposed areas where substantial road works may impact on heritage, such as the Vogelgat River, the Klein River and the entrance into Stanford were examined in detail. Digital photographs were taken of the environment and GPS tracks were recorded (Figure 6). The gpx files for our survey are available on request.

5.1 Limitations

Part of the proposed development will take place on private land and at the time of the survey, access to all the properties had not yet been obtained. Selected areas along the route were examined for any evidence of archaeological material. This is not considered to be a significance limitation and no further site investigation is deemed necessary.

There had recently been a fire and large areas along the foothills of the mountain were exposed. Ground visibility was excellent.

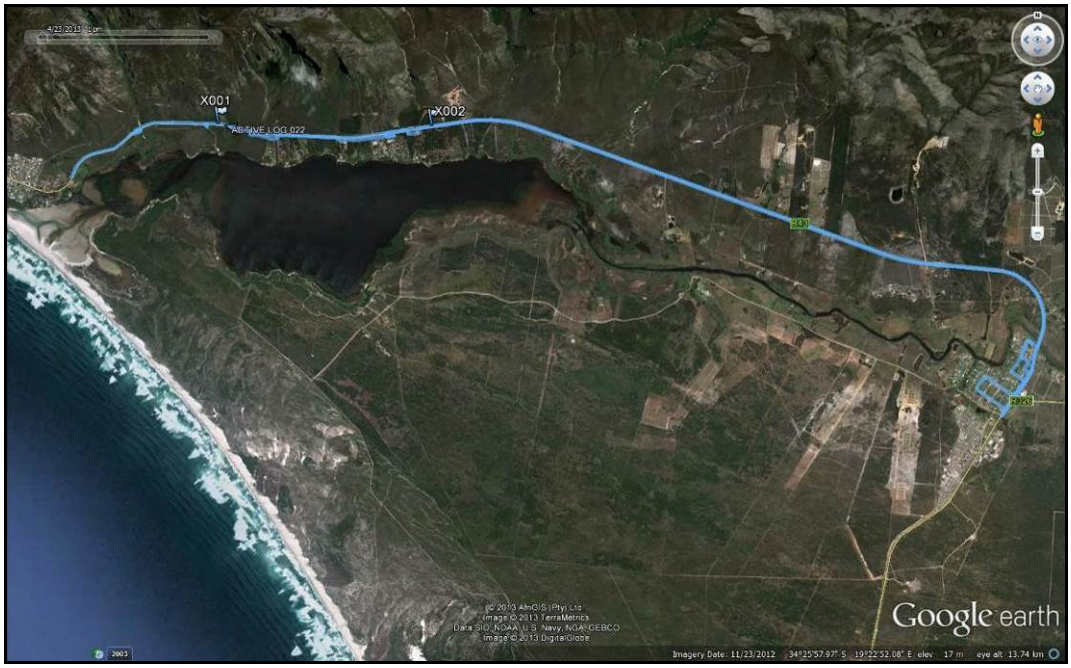

Figure 6: Tracks which were recorded during a survey of the project area.

6. IMPACT ASSESSMENT

The site visited was conducted with a view to identifying any archaeological resources which might be negatively impacted by the proposed project. The various alternatives were considered during the fieldwork.


Figure 7: View of the area around the Vogelgat River.

Figure 8: View of the areas around existing culverts which were examined for archaeological material.

Figure 9: View of the area identified for the new traffic circle at Stanford.

The existing road reserve represents an altered landscape which has already been artificially levelled. Any *in situ* archaeological material has been moved from its original context. An examination of the road reserve, at selected locations, revealed no archaeological material.

The potential impact to archaeology related to the various proposed road alignments at the bridges and temporary bypasses are similar for all alternatives (i.e. of very low significance before and after mitigation) and there is therefore no preferred alternative from an archaeological perspective.

Table 1: Table of archaeological impact assessments.

CRITERIA	WITHOUT MITIGATION	WITH MITIGATION
Extent	Local	Local
Duration	Permanent	Permanent
Intensity	Low	Low
Probability	Improbable	Improbable
Confidence	High	High
Significance	Very Low	Very Low
Cumulative impact	None	None
Nature of Cumulative impact	There will be no further cumulative impacts.	
Degree to which impact can be reversed	The destruction of archaeological resources cannot be reversed (i.e. irreversible).	
Degree to which impact may cause irreplaceable loss of resources	The archaeological resources are of very low heritage significance. However, the loss would be permanent (i.e. irreversible).	
Degree to which impact can be mitigated	There is no need to undertake any mitigation.	

The anticipated impacts to archaeology are very low and no mitigation will be required.

7. CONCLUSIONS

This Archaeological Impact Assessment has considered the possibility that the proposed alterations to the route of the TR28/2 may impact on archaeological resources. This is as a result of the Interim Comment issued by Heritage Western Cape (Case No: 130603ZS01E) requesting an Archaeological Impact Assessment.

No archaeological resources were identified and this report therefore concludes that the potential impact to archaeological resources would be of very low significance.

8. REFERENCES

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