

APPENDIX 7
CULTURAL AND HISTORICAL HERITAGE

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FINAL DRAFT REPORT

HERITAGE IMPACT ASSESSMENT OF THE PROPOSED N2 WILD COAST TOLL HIGHWAY

Assessment and report by

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For

CCA Environmental (Pty) Ltd

on behalf of

The South African National Roads Agency Limited

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EXECUTIVE SUMMARY

eThembeni Cultural Heritage was appointed by CCA Environmental (Pty) Ltd to undertake a heritage impact assessment of the proposed N2 Wild Coast Toll Highway project, in terms of the South African Heritage Resources Management Act No 25 of 1999. We reviewed a previous archaeological heritage sensitivity survey report and completed a controlled-exclusive surface survey of the proposed development area, as well as a database and literature search. We made recommendations for the mitigation of impacts on heritage resources, both site-specific and in general.

Our site-specific findings and recommendations are as follows:

- Places, buildings, structures and equipment – Any envisaged alteration or demolition of buildings older than 60 years along the entire route alignment will require a permit from the South African Heritage Resources Agency. This is particularly pertinent should the route alignment pass through the towns of Idutywa and / or Butterworth,
- Places to which oral traditions are attached or which are associated with living heritage – Part of the proposed development corridor is associated with the living heritage and oral traditions of the Amadiba Tribal Authority. As a whole the place has medium to high heritage significance at the site specific, local and regional levels, with low to medium significance at all other levels. A heritage practitioner should be appointed to undertake an oral history recording project in the local area. Parameters for the study should be set by SAHRA, with due consideration of information already obtained through the Social Impact Assessment for this project.
- Historical settlements and townscapes – No formally protected historical settlements or townscapes occur within the proposed development area. No further mitigation is required.
- Landscapes and natural features – No formally protected landscapes or natural features occur within or adjacent to the route alignment. However, the entire Amadiba Tribal Authority area, which broadly coincides with the Pondoland Centre of Endemism, may be considered as an integral part of an ethnographic landscape that has evolved over at least the last 1000 years due to a particular pattern of land use. This landscape has medium to high heritage significance at all levels. A heritage practitioner should be appointed to undertake an intensive study of the local landscape and culturally significant natural features, within parameters set by SAHRA.
- Geological sites of scientific or cultural importance – No geological sites of scientific or cultural importance were identified within and immediately adjacent to the proposed route alignment. However, fossiliferous Mzamba strata, which have low to medium heritage significance at all levels for their scientific value, could be uncovered in borrow pits. The resident geological engineer should inform SAHRA and a specialist palaeontologist in the event that such strata or the basal conglomeratic marine unit to the red sands are exposed. This recommendation should be part of the protocol developed by a heritage practitioner (see below). A permit from SAHRA is required for the alteration or destruction of any geological sites with scientific or cultural importance.
- Archaeological sites – Four *izivivane* (stone cairns) occur next to the path on the western bank of the Mpahlane River. It is likely that these sites (which have low to medium significance at local levels for their historical and social values and could also be considered as structures and a place associated with oral history and / or living heritage) will be altered or destroyed by the proposed development. A permit from SAHRA is required for the alteration or destruction of these sites.

If the Otto trading store remains will be affected, a permit must be obtained from SAHRA to remove or destroy it. A historian should investigate the site if this area is to be disturbed.

If the eastern bank of the Mzimvubu River in the vicinity of Ngqotsini will be affected, a heritage practitioner should be present at the onset of earthworks for this river crossing.

- Palaeontological sites – No palaeontological sites were identified within and immediately adjacent to the proposed route alignment. However, fossiliferous Mzamba strata, with low to medium heritage significance at all levels for their scientific value, could be uncovered in borrow pits. The resident geological engineer should inform SAHRA and a specialist palaeontologist in the event that such strata or the basal conglomeratic marine unit to the red sands are exposed. This recommendation should be part of the protocol developed by a heritage practitioner (see below). A permit from SAHRA is required for the alteration or destruction of any palaeontological sites.
- Graves and burial grounds – graves and burial grounds have been identified during the Social Impact Assessment along the proposed alignments. The burial site of King Faku of the amaMpondo, and the graves of other members of the Sigcau Royal family are located close to the existing Mzintlava bridge, which is due for widening. Negotiations with the Royal family must take place prior to the final road alignment being determined. All human remains have high heritage significance for their social value and may not be altered in any way without the permission of the families concerned and a permit from SAHRA. The developer must cease all work immediately and notify SAHRA (or Amafa aKwaZulu-Natali) if any grave or human remains are uncovered during the course of development activities.
- Sites of significance relating to the history of slavery in South Africa – None were identified within the proposed development area. No further mitigation is required.
- Movable objects excluding any object made by a living person – None were identified within the proposed development area. No further mitigation is required.

In general, a heritage practitioner should:

- Complete a heritage impact assessment of the final route chosen for the highway, as well as the locations of new access roads, construction camps and all other infrastructure.
- Compile a protocol to be followed by the road construction contractors in the event that any heritage resources are discovered during construction activities.
- Compile and conduct training courses for all relevant personnel to enable them to participate effectively in heritage resource management.
- Undertake regular monitoring as construction activities proceed.

These recommendations might coincide broadly with those proposed for other aspects of the environmental impact assessment, particularly the social component. Where possible, specialist fieldwork should be multi-disciplinary to minimise duplication of workshops and meetings, with concomitant reduction of financial costs.

Site-specific alternative route alignments offer no advantages in terms of impact on heritage resources over the preferred alignment. Given the conclusion of the Social Impact Assessment that the social and economic benefits of the project outweigh the negative impacts, and the fact that satisfactory mitigation of heritage resources is possible, we believe that the no-go option has no necessary benefit for heritage resources. This conclusion does not ignore the fact that the heritage impact assessment of the final route alignment, as well as the oral history and landscape studies recommended in this report, might propose changes to the alignment based on the discovery of as-yet-unknown heritage resources, particularly ancestral graves.

The Social Impact Assessment describes an affected rural community whose way of life is dynamic and influenced by changes elsewhere in South Africa. The significance and value of both tangible and intangible heritage resources are equally subject to change and re-evaluation. In this context, the impacts of the feasible alternatives on the 'traditional socio-cultural way of life' of affected communities may be viewed as follows:

- The no-go option – the toll road is not constructed. Changes will continue to occur to the landscape that constitutes arguably the most significant heritage resource (apart from ancestral graves) within the study area.
- Alternative route alignments – changes to a 'traditional socio-cultural way of life' will be the same, directly affecting a different section of the resident community, but with very similar overall effects.

In terms of heritage resources we encountered no fatal flaws to the project if the proposed mitigation is followed.

We have submitted this report to SAHRA in fulfilment of the requirements of the Heritage Resources Management Act. The relevant SAHRA personnel are Dr Antonieta Jerardino (telephone 021 462 4502) and Mr Thanduxolo Lungile (telephone 043 722 1740/2/6). The relevant Amafa staff member is Ms Wesuwe Tshabalala (telephone 033 3946 543).

If permission is granted for the development to proceed, the client is reminded that the Act requires that a developer cease all work immediately and notify SAHRA or Amafa should any heritage resources, as defined in the Act, be discovered during the course of development activities.

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1. INTRODUCTION

1.1 Background

eThembeni Cultural Heritage was appointed by CCA Environmental (Pty) Ltd to undertake a heritage impact assessment of the proposed N2 Wild Coast Toll Highway in terms of the South African Heritage Resources Management Act No 25 of 1999. Section 38(1) of the Act requires such an assessment in case of:

- (a) construction of a road, wall, power line, pipeline, canal or other similar form of linear development or barrier exceeding 300 m in length;
- (b) construction of a bridge or similar structure exceeding 50 m in length; and
- (c) any development, or other activity which will change the character of an area of land, or water –
 - (i) exceeding 10 000 m² in extent;
 - (ii) involving three or more existing erven or subdivisions thereof; or
 - (iii) involving three or more erven, or subdivisions thereof, which have been consolidated within the past five years; or
- (d) the costs of which will exceed a sum set in terms of regulations; or
- (e) any other category of development provided for in regulations.

1.2 Overall project description

The South African National Roads Agency Limited (SANRAL) has proposed the construction of the N2 Wild Coast Toll Highway extending over a total distance of approximately 560 kilometres between the N2 Gonubie Interchange (near East London in the Eastern Cape Province) and the N2 Isipingo Interchange (south of Durban in KwaZulu-Natal; see Appendix A). It is envisaged that the design, construction, financing, operation and maintenance of the proposed highway will be undertaken as part of a 30-year concession contract.

The key components of the proposed project include:

- Upgrade and widening of existing road sections of the N2 and R61 included within the proposed project (approximately 470 kilometres) from a 30 metre to an 80 metre servitude;
- New road construction within two greenfield sections (approximately 90 kilometres) within an 80 metre servitude;
- Construction of eight new major bridges;
- Upgrade and/or construction of new road interchanges and intersections; and
- Construction of associated structures (such as toll plazas, pedestrian overpasses and animal underpasses).

The proposed project aims to provide a national route that improves access and linkage to the east coast region of South Africa while reducing road-user costs and optimising safety, comfort and socio-economic benefits. The proposed route alignment will connect major economic centres, including East London, Butterworth, Mthatha, Lusikisiki, Port Edward, Port Shepstone and Durban, and be approximately 75 kilometres shorter than the existing N2 route between East London and Durban via Mount Frere, Kokstad and Harding. Approximately 80% of the proposed route utilises existing road sections.

In the Department of Environmental Affairs and Tourism-approved Final Scoping Report (see www.ccaenvironmental.co.za) the following alternatives were considered feasible and were to be investigated in the course of the Environmental Impact Assessment:

- The 'do nothing' alternative;
- SANRAL's preferred alignment between Lusikisiki and the Mthamvuna River;
- Site-specific alternative route alignments in the greenfields sections of the proposed project, in the sections between Ndwalane and Ntafufu and between Lusikisiki and the Mthamvuna River, as follows:
 - for the proposed alignment between Ndwalane and the Mzimvubu River;
 - for the proposed alignment in the vicinity of Ntafufu village and the Ntafufu River;

- for the proposed alignment of the approach to the Msikaba bridge crossing site;
- for the proposed alignment across the Mthentu River; and
- for the proposed alignment across the Mnyameni River.
- The Coastal Mzamba route between Lusikisiki and the Mthamvuna River; and
- Alternative mainline toll plaza positions to SANRAL's preferred Ndwalane and Mthentu mainline toll plazas

1.2.1 The greenfield sections

New road construction is proposed between Ndwalane and Ntafufu, and between Lusikisiki and the Mthamvuna River (greenfield sections). Within the new road sections, major bridge crossings are required at eight deeply incised gorges, namely the Mzimvubu, Msikaba, Kwadlambu, Mthentu, Mnyameni, Kulumbe, Mpahlane and Mzamba rivers.

The greenfield sections of the proposed route run largely through the Amadiba Tribal Authority area, the traditional homeland of Pondo speaking people. Biophysically, this area is referred to as the Pondoland Centre of Endemism. During the Scoping Phase of the project specialist consultants identified several site-specific alternative route alignments within this section, where the proposed toll highway would traverse potential areas of concern.

1.2.1.1 Site-specific alternative route alignments

- Ndwalana to the Ntafufu River

The length of this section is approximately 16.5 kilometres. It begins approximately 10 kilometres inland of Port St Johns and will bypass the existing Mzimvubu Pondoland Bridge. It will involve the construction of a new road to national road standards between Ndwalane and Ntafufu and a major high-level bridge crossing over the Mzimvubu River. The proposed new road will comprise a two-lane single carriageway highway within a road reserve of 80 metres with:

- Two alternatives for the proposed alignment between Ndwalane (R61) and the Mzimvubu River (referred to as Alternatives 1b and 1e); and
- Two alternatives for the proposed alignment in the vicinity of Ntafufu village and Ntafufu River (referred to as Alternatives 2a and 2f).

- Lusikisiki (Magwa Intersection) to the Mthamvuna River:

This section will involve the construction of a new road to national road standards, with a length of approximately 73.5 kilometres and a road reserve of 80 metres. The first 12.5 kilometres of the proposed N2 road will essentially follow the horizontal alignment of DR 08024 to the Magwa Intersection. Thereafter the new road will be diverted from the DR 08024 alignment and follow a proposed greenfields alignment up to the Mthamvuna River Bridge. A number of deeply incised gorges and minor streams will be crossed. The gorges, some in the order of 200 to 300 metres deep, include the Msikaba, Mthentu, Kwadlambu, Mnyameni, Kulumbe, Mpahlane and Mzamba River gorges with:

- Three alternatives for the proposed alignment at the diversion from the gravel road east of Lusikisiki (approximately 12.5 kilometres east of Lusikisiki) and the Msikaba River (referred to as Alternatives 5g, 5e and 5g4). These are for the approach to the Msikaba bridge crossing site;
- Two alternatives for the proposed alignment across the Mthentu River (referred to as Alternatives 9e and 9d5). These are alternative approaches to, and crossing points over, the Mthentu River; and
- Three alternatives for the proposed alignment across the Mnyameni River (referred to as Alternatives 10a, 10c and 10e).

The findings of the Environmental Impact Assessment will provide information that will be used to define the final route.

2. TERMS OF REFERENCE

2.1 General

The specialist reports compiled as part of the previous EIA process are considered to reflect independent specialist studies suitable for use in the current EIA. However, I&APs, authorities, a previous review and the review by the EIA project team have identified a number of shortcomings and/or gaps in these studies. Thus these Terms of Reference are aimed at:

- Reviewing previous independent specialist reports, where applicable, in order to determine the continued relevance thereof;
- Updating existing information, where applicable, in light of any relevant new information and current project details; and
- Ensuring that all relevant issues / potential impacts and key shortcomings and/or gaps are adequately addressed.

New specialist reports would be compiled which would incorporate, as appropriate, updated information contained in the previous independent specialist reports and the results of any new investigations.

Specialists would be required to assess and rate all potential impacts in terms of a rigorous assessment methodology, as presented in Appendix G. This would include consideration of uncertainty (e.g. lack of current knowledge or understanding of cause-effects) and potential cumulative effects in the assessment of impacts, as required by the EIA Regulations and NEMA. Specialists would also be required to consider recommended mitigation measures in light of their likely effectiveness and practicability.

The assessment of impacts should broadly be undertaken in accordance with the guidelines provided in the Guidelines Document: EIA Regulations (DEAT, 1998), the NEMA principles and Section 24(4) of NEMA (as amended), as appropriate to the specific field of study. In addition, the following General Terms of Reference would apply to each of the specialist studies:

- Describe the baseline conditions that exist in the study area and identify any sensitive areas that would need special consideration;
- Ensure that all issues and concerns and potential environmental impacts relevant to the specific specialist study are addressed and recommend the inclusion of any additional issues required in the Terms of Reference, based on professional expertise and experience. Also consider comments on the previous specialist study as per the review of the previous EIA process, appeals and RoD commissioned by the Minister of Environmental Affairs and Tourism (final report dated 29 October 2004), as appropriate;
- Provide a brief outline of the approach used in the study. Assumptions, sources of information and the difficulties with predictive models must also be clearly stated;
- Indicate the reliability of information used in the assessment, as well as any constraints / limitations applicable to the report (e.g. any areas of insufficient information or uncertainty);
- Identify the potential sources of risk to the affected environment during the construction and operational phases of the proposed project;
- Identify and list relevant legislative and permit requirements applicable to the potential impacts of the proposed project;
- Include an assessment of the 'do nothing' alternative and identified feasible alternatives;
- Assess and evaluate potential direct and indirect impacts during both the construction and operational phase of the proposed project;
- Identify and assess any cumulative effects arising from the proposed project;
- Undertake field surveys, as appropriate to the requirements of the particular specialist study;
- Identify areas where impacts could combine or interact with impacts likely to be covered by other specialists, resulting in aggravated or enhanced impacts and assess potential effects;
- Apply the precautionary principle in the assessment of impacts, in particular where there is major uncertainty, low levels of confidence in predictions and poor data or information;
- Determine the significance of assessed impacts according to a Convention for Assigning Significance Ratings to Impacts (Appendix G);
- Recommend practicable mitigation measures to minimise or eliminate negative impacts, enhance potential project benefits or to protect public and individual rights to compensation and indicate

how these can be implemented in the final design, construction and operation of the proposed project;

- Provide a revised significance rating of assessed impacts after the implementation of mitigation measures;
- Identify ways to ensure that recommended mitigation measures would be implemented, as appropriate; and
- Recommend an appropriate monitoring and review programme in order to track the effectiveness of proposed mitigation measures.

2.2 Project specific

- a) Describe the importance of the study area in terms of historical heritage and identify sites of spiritual and religious importance along the entire route of the proposed project and identified feasible alternatives. Assess the potential impacts of the proposed project and identified feasible alternatives on historical heritage and sites of spiritual and religious importance (including burial grounds and graves, cultural landscapes or views and sites of cultural significance associated with oral histories); and
- b) Describe and assess the potential impacts of the proposed project and identified feasible alternatives on the traditional socio-cultural way of life of affected rural communities (in association with the social study).

National heritage legislation determines the general nature and scope of heritage impact assessments. Reports in fulfilment of Section 38(3) of the Heritage Resources Management Act 1999 must include the following information:

- (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 regulations;
- (c) an assessment of the impact 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 completion of the proposed development.

Heritage resources include the following wide range of places and objects:

- (a) places, buildings, structures and equipment;
- (b) places to which oral traditions are attached or which are associated with living heritage;
- (c) historical settlements and townscapes;
- (d) landscapes and natural features;
- (e) geological sites of scientific or cultural importance;
- (f) archaeological and palaeontological sites;
- (g) graves and burial grounds, including -
 - (i) ancestral graves,
 - (ii) royal graves and graves of traditional leaders,
 - (iii) graves of victims of conflict,
 - (iv) graves of important individuals,
 - (v) historical graves and cemeteries older than 60 years, and
 - (vi) other human remains which are not covered under the Human Tissues Act, 1983 (Act No.65 of 1983 as amended);
- (h) sites of significance relating to the history of slavery in South Africa;
- (i) movable objects, including -
 - (i) objects recovered from the soil or waters of South Africa including archaeological and palaeontological objects and material, meteorites and rare geological specimens;
 - (ii) ethnographic art and objects;

- (iii) military objects;
- (iv) objects of decorative art;
- (v) objects of fine art;
- (vi) objects of scientific or technological interest;
- (vii) books, records, documents, photographic positives and negatives, graphic, film or video material or sound recordings; and
- (viii) any other prescribed categories, but excluding any object made by a living person.

3. DESCRIPTION OF THE STUDY AREA AND HERITAGE RESOURCE ISSUES

The study area extends for a distance of approximately 560 kilometres, along existing sections of the N2 and R61 routes and through certain greenfield sections, between Gonubie near East London in the Eastern Cape Province and Isipingo south of Durban in KwaZulu-Natal.

In concurrence with the Social Impact Assessment (Bews *et al* 2007) the proposed route was assessed according to the following sections:

- Section 1: Gonubie Interchange to Ngobozi – approximately 80km over the existing N2
- Section 2: Ngobozi to Mthatha (Ngqeleni) – approximately 145km over the existing N2
- Section 3: Mthatha (Ngqeleni) to Ndwalane – approximately 72km over the existing R61
- Section 4: Ndwalane to Ntafufu River – approximately 16.5km of new road section
- Section 5: Ntafufu River to Lusikisiki (Magwa Intersection) – approximately 24.5km over the existing R61 (approximately 18km) and over the existing concrete road (DR08024 approximately 5km)
- Section 6: Lusikisiki (Magwa Intersection) to Mthamvuna River – approximately 73.5km of largely greenfield sections
- Section 7: Mthamvuna River to Isipingo Interchange – approximately 148km over the existing R61 and N2.

Along the proposed alignment from East London to Durban, Sections 1, 2, and 3 comprise a largely rural landscape with small development nodes clustered around a few small towns. Sections 4, 5 and 6 comprise the largely rural greenfield sections between Mthatha (Ngqeleni) and the Mthamvuna River incorporating sections of the R61 and new road sections, in places over extremely rugged terrain. Section 7 of the road follows the R61 and N2 route from the Mthamvuna River to the Isipingo Interchange, south of Durban. This final section progresses through a traditional rural and then commercial farming landscape linking a number of small and medium size resort towns and becomes increasingly urbanised towards the Isipingo Interchange.

As Sections 1, 2, 3, 5 and 7 of the proposed N2 Toll route utilise existing road sections the focus of this study has been on Sections 4 and 6 (the greenfield sections) of the route alignment, with consideration of the other sections as appropriate.

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3.1 Sections 1, 2 and 3: Gonubie via Mthatha to Ndwalane

Two types of rural settlement patterns occur along this section. From Gonubie to the Great Kei River large private commercial farms dominate the landscape. In the areas that form part of the former Transkei tenured rural communal settlements prevail. Most of these settlements have formally laid out residential areas (*ilali*) as a consequence of betterment planning during the apartheid era. Where planning was not implemented or adhered to, a more scattered settlement pattern occurs. These rural settlements are, as a rule, surrounded by areas of arable and communal grazing lands.

The proposed highway runs through three urban settlements, namely Butterworth, Idutywa and Mthatha. Butterworth and Idutywa are local administrative and services centres, respectively. Mthatha is the largest town and acts as the major regional administrative and service centre. The town has experienced significant population growth and a spread of informal settlements in its peri-urban areas over the last decade. From Mthatha to Ndwalane, the R61 traverses approximately 72km of rugged terrain characterised by extensive traditional communal settlement, with some nodal development and betterment planned areas adjacent to the route.

Ribbon development is a feature of the settlement pattern along the existing N2, particularly in the areas close to Butterworth and both east and west of Mthatha. Many households are located immediately adjacent to the road fences and servitude, and in instances homesteads have been built right within the current road reserve. Widening of the road reserve from 30 to 80 metres will result in a large (as yet unknown) number of households needing to be moved and resettled to make way for the expanded highway reserve. Many of these households have built substantial houses on their sites. Stakeholders interviewed during the Social Impact Assessment process were concerned about what would happen to those people who live in the way of the proposed road, where they would be moved to and what compensation would be paid. There were also concerns about the graves of family members who have been buried in homestead gardens (Bews *et al* 2007).

Apart from graves, no sites of archaeological, cultural or historical significance were identified over these three sections of the route. It is, however, possible that sites are potentially covered by soil and vegetation and may only be located during earthworks during the construction phase. However, the presence of any such sites is considered unlikely given the road construction activities that have taken place to date. Should any such sites be identified during the construction of the proposed toll road, the South African Heritage Resources Agency (SAHRA) should be notified in order that a qualified heritage practitioner can determine site significance and appropriate mitigation.

A decision is yet to be finalised as to the route alignment through or around Idutywa and Butterworth. In the event of these towns not being by-passed, and that the road passes through them with the proposed one-way street widening being implemented, the contractor must then be made aware that any envisaged alteration or demolition of buildings older than 60 years will require application for a permit from the South African Heritage Resources Agency.

3.2 Section 4: Ndwalane to the Ntafufu River

This section is proposed as a predominantly greenfield development of approximately 16km. It is uncharacteristic of the typical greenfield sections in that the proposed route traverses a large portion of formerly private farmland in the 'Umzimvubu bends'. This land is currently held in trust by the Department of Land Affairs and is occupied by members of the Ndamase Royal Family of the Nyandeni Regional Authority as well as by lessees.

There are two alternative alignments proposed in this area. The first, between the R61 and the Mzimvubu River, threatens access by means of the Fort Harrison road to the farming areas. A possible historical site may be situated at the Riverside Primary School Area (S31 36 02; E29 2914). According to the occupant, Mr D. Otto, a trading store was built there in 1901 (*vide* Mr J. Costello). If this is the case and remains are preserved (including rubbish dumps) a permit must be obtained from SAHRA to remove or destroy it. A historian should investigate the site if this area is to be disturbed (see also Binneman 2002).

Field inspections in late 2007 confirmed the presence of randomly scattered Late Iron Age pottery on the eastern bank of the Mzimvubu River (see also Binneman 2002) in the vicinity of Ngqotsini (S31 32 53.0; E29 28 42.0). However, dense vegetation and consequent poor surface visibility precluded further intensive survey of this area. The colluvial spurs adjacent to the river here fall within the proposed route alignment. The potential presence of subterranean Early Iron Age deposits in these colluvial lower valley bottom locales cannot be precluded (Binneman 1996; Feely 1987; Prins 1993; Prins and Granger 1993). An archaeologist should be present, as per the protocol discussed below, at the onset of earthworks for this river crossing.

The second alignment is close to Mampube Village and could result in some resettlement and this community being divided into two sections (Huggins 2002:6). Other villages along this section and across the Mzimvubu River that may be affected are Sphatha, Mgugwana, Ntafufu, Ntongwana and Luqhoqweni, with Ntafufu facing the greatest threat. The alternative alignment running through the village of Ntafufu and avoiding the two schools, described in the first Social Impact Assessment (Huggins 2002:6) remains the socially preferred route despite the fact that it transverses agricultural land.

Negative issues identified during the Social Impact Assessment process were the potential for a reduction in the access to grazing lands and fields, to a dip tank on one side of the route, and to the Ntafufu River bisecting the community and one of its major water sources. Limits to access by pupils to multipurpose facilities such as the local Junior Secondary, directly in the path of the route and requiring relocation, and the Senior Secondary schools and their playing fields were also raised. Relatively severe restrictions on access to natural capital resources and assets in the form of water, forests, plantations and grazing and

arable land were reported, as were resettlement issues and the removal of graves. Impacts on the social capital held in graves, and on prospects for removal were raised as a concern. It was noted that in this area graves were often sited at old abandoned homesteads far from present residences. Interviewees indicated a minimum of four graves potentially impacted in Ntafufu. For all groups a proper relocation process, compensation and exhumation, where necessary, were viewed as suitable mitigation.

Access to natural capital resources and public facilities could best be mitigated through the selected positioning of underpasses, accompanied by the accelerated provision of electricity and planting new woodlots. Professional respondents and the youth highlighted the potential limits in access to a church, while some youth mentioned the Rothra Lake as an initiation site and a place of local cultural heritage significance. Agreed mitigation was generally for under or overpasses to maintain community access and compensation and relocation for the church (Bews *et al* 2007).

Rothra Lake, only identified during the Social Impact Assessment interview process, will need to be the subject of a separate heritage impact assessment if it is indeed sacred and in the path of or near the selected preferential route.

3.3 Section 5: Ntafufu River to Lusikisiki

Section 5 consists of approximately 24.5km of road stretching between the Ntafufu River to Lusikisiki, at the Magwa Intersection. This section of the route traverses a combination of large open grazing lands, traditionally dispersed households and communities, some betterment planned areas and several densely settled peri-urban areas situated east of Lusikisiki, which include certain ribbon developments. All the conditions and characteristics regarding land use, settlement and lifestyle as described in the foregoing sections prevail. The proposed route through this section will consist of approximately 25km of rehabilitation, the construction of climbing lanes, road widening and bridge widening at the Mzintlava River, and an upgrading of the existing R61, with an interchange proposed just outside of Lusikisiki and the upgrading of the Magwa Intersection (Bews *et al* 2007).

Some of the negative concerns expressed by interviewees were the expropriation of houses and maize fields close to the road and the possible removal of graves. Professional respondents cited the possibility of access to King Faku's Heritage Place, which is a grave located along the Mzintlava River in the vicinity of the bridge earmarked for widening (Bews *et al* 2007).

The location of the Heritage Site of King Faku of the amaMpondo, and the graves of other members of the Sigcau Royal family was ascertained during eThembeni field work in November 2007. Due to ritual restrictions informants were unable to take us to the site, but pointed out its locality from a viewpoint immediately east of the existing Mzintlava Bridge. From Google Earth imagery the site is reckoned to be at approximately S31 25 38; E29 28 19 (Appendix I). Whilst it appears that proposed construction activities will have negligible physical impacts on the site, it is recommended that negotiations with the Royal family must take place prior to the final road alignment being determined and bridge construction implemented.

3.4 Section 6 – Lusikisiki (Magwa Intersection) to Mthamvuna River

The final section of the proposed route alignment in the Eastern Cape Province is from the Magwa Intersection outside of Lusikisiki to the Mthamvuna River Bridge south of Port Edward. This is predominantly a greenfield development covering approximately 74km. The SANRAL's preferred route would follow the existing concrete District Road (DR08024) eastwards over a distance of approximately 19km through the outskirts of Lusikisiki and then divert north eastwards and cross the Msikaba River approximately 14–15km inland. Continuing inland it would cross the Mthentu River and then align eastward up to a distance of about 5km from the coast. The route would cross the Mnyameni River after which it would loop in a north easterly direction to cross the Mphalane and Mzamba Rivers at a distance of about 2–3km inland. Thereafter it would intersect with and cross the existing R61 alignment to the Mthamvuna crossing adjacent the Wild Coast Sun complex and join the alignment of the existing R61 at the existing Mthamvuna River Bridge.

The alternative Coastal Mzamba route is also under consideration. This route is a variation of the preferred route, and has been proposed by SANRAL to address concerns arising from conservation planning and by Interested and Affected Parties about the greenfield route in general and the proposed

alignment between the Mthentu and Mthamvuna Rivers in particular. The Coastal Mzamba route would follow SANRAL's preferred alignment from Lusikisiki up to northeast of the Mthentu River crossing. It would then continue for a distance of between 11 and 16km inland to a position east of Makwenteni after which it would be aligned between the Mpahlane and Mzamba Rivers with the coast. It would then join SANRAL's preferred route south of the proposed crossing of the Mzamba River and essentially follow SANRAL's preferred alignment up to the Mthamvuna crossing.

Due to its wholly greenfield nature Section 6 has received the closest environmental scrutiny. It largely traverses the Amadiba Tribal Authority area, the traditional homeland of Pondo speaking people, and is a biotically unique landscape, referred to as the Pondoland Centre of Endemism This is discussed in further detail under landscapes in Section 7 below.

The alignment options all run between the respective drainage basins of the Ntafufu and Mthamvuna rivers. To the west the principal geological formations are primarily Karoo System Beaufort and Ecca Series shales, with doleritic intrusions occurring further to the south and west. The principal geology to the east is the Msikaba Sandstone Formation. A basal conglomeratic marine unit underlain by fossiliferous Mzamba Formation strata abuts these sandstones along a palaeo embayment adjacent to the extant coastal littoral (Cooper and Greyling 1996). These fossil and geological features are discussed in Section 5 below.

The landforms of the Msikaba Sandstone Formation comprise a fairly gently sloping plateau, ranging from about 450 metres in elevation at its inland boundary to about 80 metres high at the coastal escarpment. It is characterised by gently rolling hills, flat grassy plains and deeply incised gorges on the Mzimvubu, Ntafufu, Msikaba, Mthentu, Mnyameni, Mzamba and Mthamvuna rivers. The primary vegetation type is classified as Pondoland-Ugu Sandstone Coastal Sourveld. Coastal and scarp forests occur within the river gorges and as forest pockets within their tributary valleys.

Apart from the villages of Ntafufu, Lusikisiki and Magwa, other settlement concentrations are confined to smaller villages and hamlets close to the principal district roads. Outside of these village settlements (*ilali*) not much formal infrastructure is present. Clinics, schools and tuck shops are widely dispersed and a very poor, mostly informal, road and track network traverses the landscape. Telecommunications are largely limited to cellular reception in a few places.

Some remnant betterment settlements remain in the area but the predominant land use pattern is one of traditional clan-based scattered subsistence homesteads, in clusters of agnatic kin. Ancestral graves are located within or close to extant or abandoned homestead precincts. The primary economic activity is garden and field crop agriculture with livestock husbandry on communal range lands. Woodlots occur ubiquitously and are cultivated primarily for fuel and roof timbers. Indigenous scarp and riparian forests are an important source of medicinal plants and animals, bush meat, wild fruits and vetches, construction timber, and materials for the manufacture of household utensils and artefacts.

Pertinent to this report was the response of interviewees to the issue of graves within the proposed alignments. They collectively feared a loss in the social capital held in homesteads and graves and it was also stated that graves are often at original homestead sites, long since left for new homesteads. Characteristically, most were optimistic of negotiating new homestead sites from the local headman, but required an orderly and proper compensation and exhumation process (Bews *et al* 2007).

3.5 Section 7: KwaZulu-Natal

Section 7, between the Mthamvuna River (Port Edward) and the Isipingo Interchange, falls within the Province of KwaZulu-Natal. The proposed alignment will here run within the existing road reserves of the existing R61 and N2 respectively. Consequently, no impacts to heritage resources are anticipated and thus no requirements in terms of the KwaZulu-Natal Heritage Act No.10 of 1997 need be fulfilled. However, should construction activities extend beyond the bounds of the existing road reserve these would have to be the subject of separate impact assessments in terms of this Act. Further, all contractors need be reminded that the Act requires that a developer cease all work immediately and notify Amafa aKwaZulu-Natali should any heritage resource, as defined in the Act, be discovered during the course of development activities.

4. METHODOLOGY

The compilation of this final draft report was informed by peer review comments received on a first draft (see Appendix J, which includes a Comments and Response table).

4.1 Review of the archaeological heritage sensitivity survey

The Archaeological Heritage Sensitivity Survey compiled by Dr. Johan Binneman of the Archaeology Department of the Albany Museum in Grahamstown is included in Appendix B. We reviewed this document to ascertain:

- its continued relevance to the environmental impact assessment; and
- which heritage resources identified in the report could be affected by the proposed development.

Only those resources that occur within the proposed road alignments and servitudes are included in Section 5, below.

4.2 Controlled-exclusive surface survey

An eThembeni staff member inspected the area in June 2007 by vehicle and helicopter in the company of SANRAL and the CCA Environmental project management teams. We returned to the field in August, September and November 2007 to survey for potential heritage sites, ground truth the route alignment and alternatives, and identify the sites recorded in Appendix B.

We completed a controlled-exclusive surface survey, where 'sufficient information exists on an area to make solid and defensible assumptions and judgements about where [heritage resource] sites may and may not be' and 'an inspection of the surface of the ground, wherever this surface is visible, is made, with no substantial attempt to clear brush, turf, deadfall, leaves or other material that may cover the surface and with no attempt to look beneath the surface beyond the inspection of rodent burrows, cut banks and other exposures that are observed by accident' (King 1989).

The client has provided maps of the area, to be submitted to SAHRA separately, but a location map is provided in Appendix A. We consulted various provincial databases and undertook a limited literature review, included as Appendix C, with a bibliography and references in Appendix D. We assessed the value and significance of heritage resources, as defined in the Heritage Resources Management Act 1999 and the criteria contained in Appendix E. Culturally significant landscapes were assessed according to the criteria in Appendix F. Potential impacts on heritage resources were rated according to the criteria in Appendix G.

Geographic coordinates were obtained with a handheld Garmin GPS 60 global positioning unit. Photographs were taken with a Nikon Coolpix S200 digital camera and will be submitted to SAHRA on compact disc. Appendix H contains a statement of independence and a summary of our ability to undertake this heritage impact assessment.

4.3 Assumptions and limitations

- We have assumed that the description of the proposed project, provided by CCA Environmental (Pty) Ltd, is accurate.
- We have assumed that the public consultation process undertaken as part of the Environmental Impact Assessment is sufficient and adequate and does not require repetition as part of the heritage impact assessment.
- Soil surface visibility was poor to moderate overall. Heritage resources might be present below the soil surface and / or in areas of limited visibility and we remind the client that the Act requires that a developer cease all work immediately and notify SAHRA should any heritage resources, as defined in the Act, be discovered during the course of development activities.
- No subsurface investigation (including excavations or sampling) were undertaken, since a permit from SAHRA is required to disturb a heritage resource.

5. REVIEW OF THE ARCHAEOLOGICAL HERITAGE SENSITIVITY SURVEY

The methodology employed in this study (see Appendix B) was appropriate and the resulting observations remain valid. However, it was undertaken at a time when heritage authorities prioritised archaeological impact assessments above comprehensive heritage impact assessments. Consequently, heritage resources such as ancestral graves and intangible heritage were not routinely recorded and managed prior to development. These shortcomings have been addressed by the commission of the heritage impact assessment undertaken by eThembeni and the Social Impact Assessment conducted by Dr Neville Bews & Associates.

We reviewed the locations of the sites identified in the archaeological sensitivity study relative to the proposed road route alignments. Only those resources that will be affected directly by the alignments and servitudes are included in Section 6, below.

6. CONTROLLED-EXCLUSIVE SURFACE SURVEY - OBSERVATIONS

No development activities associated with the proposed project had begun at the time of our visit, in accordance with national heritage legislation. The impact rating scale provided in Appendix G has been used throughout this section and we advise the reader to refer to it where appropriate.

6.1 Places, buildings, structures and equipment

A decision is yet to be finalised as to the route alignment through or around Idutywa and Butterworth. In the event of these towns not being by-passed, and that the road passes through them with the proposed one-way street widening being implemented, any envisaged alteration or demolition of buildings older than 60 years will require a permit from the South African Heritage Resources Agency. This requirement pertains to any such buildings or structures along the entire route alignment.

Impact – Not able to ascertain.

6.2 Places to which oral traditions are attached or which are associated with living heritage

Part of the proposed development area is associated with the living heritage and oral traditions of the AmaDiba Tribal Authority. This place has medium to high heritage significance at the site specific, local and regional levels, with low to medium significance at all other levels.

Impact – People living immediately adjacent to the proposed road will be affected by noise and air pollution (including windborne sand) generated by construction activities. The route alignment will impose a linear disjunction to the area itself for traversing and grazing purposes. These impacts (addressed in separate studies) will affect the ability of residents to continue utilising places and resources associated with oral traditions and living heritage. If impacts do occur, the following ratings apply without mitigation:

Intensity	medium to high
Extent	site and local
Duration	long term to permanent
Probability	definite
Status of the impact	cost
Degree of confidence	medium to high
Significance	high

Rothra Lake, an initiation site and a place of local cultural heritage significance, only identified during the Social Impact Assessment interview process, will need to be the subject of a separate heritage impact assessment if it is indeed sacred and in the path of or near the selected preferential route.

6.3 Historical settlements and townscapes

No formally protected historical settlements or townscapes occur within the proposed development area.

Impact – Not applicable.

6.4 Landscapes and natural features

No formally protected landscapes or natural features occur within or adjacent to the route alignment. However, the entire AmaDiba Tribal Authority area, which broadly coincides with the Pondoland Centre of Endemism, may be considered as an integral part of an ethnographic landscape that has evolved over at least the last 1000 years due to a particular pattern of use, i.e. extensive livestock management within the context of low density human settlement and subsistence agriculture. This landscape has medium to high heritage significance at all levels.

Impact – This landscape will be altered visually and in terms of its current and potential land use. Livestock movement and human traffic between homesteads will be altered, while the potential for the creation of coastal and near-coastal conservation areas may be compromised. If impacts do occur, the following ratings apply without mitigation:

Intensity	high to very high
Extent	site and local
Duration	long term to permanent
Probability	definite
Status of the impact	cost
Degree of confidence	medium to high
Significance	high

With mitigation, the significance of the impacts will be moderate.

6.5 Geological sites of scientific or cultural importance

No geological sites of scientific or cultural importance were identified within and immediately adjacent to the proposed route alignment. However, the Mzamba Formation, which occurs between the Mzamba and Mtentu rivers, is an Upper Cretaceous (Middle Santonian-Lower Campanian) unit (Greyling 1992) with onshore thicknesses of up to 33 metres (Thomas 1988). It rests unconformably on the Msikaba sandstones with a stepped basal contact due to plantation by two discrete transgressions (Middle Santonian, Lower Campanian) (Cooper and Greyling 1996).

The strata are subhorizontal, dipping very shallowly (2-4°) to the southeast, and comprise mainly blue-grey to dark olive-green sandstones alternating with richly-fossiliferous limestones which are generally pebbly in the lower part of the succession. The protected stratotype is on both sides of the Mzamba estuary where it is exposed for some two kilometres, both in cliffs and as a surf zone platform. The Mzamba Formation has low to medium heritage significance at all levels for its scientific value.

Impact – It is unlikely that fossiliferous Mzamba strata will be exposed during construction of the proposed road, but such strata could be uncovered in borrow pits. If impacts do occur, the following ratings apply without mitigation:

Intensity	high to very high
Extent	site
Duration	permanent
Probability	improbable to possible
Status of the impact	cost
Degree of confidence	low to medium
Significance	medium to high

With mitigation, the significance of the impacts will be low to moderate.

6.6 Archaeological sites

Four *izivivane* (stone cairns) occur next to the path on the western bank of the Mpahlane River, at S31 06 21.0; E30 08 10.0 (see Appendix B). They have low to medium significance at local levels for their historical and social values.

A possible archaeological / historical site may be situated at the Riverside Primary School Area (S31 36 02; E29 2914). According to the occupant, Mr D. Otto, a trading store was built there in 1901 (*vide* Mr J. Costello).

Field inspections in late 2007 confirmed the presence of randomly scattered Late Iron Age pottery on the eastern bank of the Mzimvubu River (see also Binneman 2002) in the vicinity of Ngqotsini (S31 32 53.0; E29 28 42.0). However, dense vegetation and consequent poor surface visibility precluded further intensive survey of this area. The colluvial spurs adjacent to the river here fall within the proposed route alignment. The potential presence of subterranean Early Iron Age deposits in these colluvial lower valley bottom locales cannot be precluded.

Impact – It is likely that these archaeological sites (which could also be considered as structures and a place associated with oral history and / or living heritage) will be altered or destroyed by the proposed development. Without mitigation, the following impact ratings apply:

Intensity	low to medium
Extent	site and local
Duration	permanent
Probability	probable to definite
Status of the impact	cost
Degree of confidence	medium to high
Significance	medium to high

With mitigation, the significance of the impacts will be low to moderate.

6.7 Palaeontological sites

No palaeontological sites were identified within and immediately adjacent to the proposed route alignment.

Impact – Fossiliferous Mzamba strata, with low to medium heritage significance at all levels for their scientific value (see Section 6.5) could be uncovered in borrow pits. If impacts do occur, the following ratings apply without mitigation:

Intensity	high to very high
Extent	site
Duration	permanent
Probability	improbable to possible
Status of the impact	cost
Degree of confidence	low to medium
Significance	medium to high

With mitigation, the significance of the impacts will be low to moderate.

6.8 Graves and burial grounds

A yet to be audited number of graves and burial grounds within the proposed development area were noted in the course of the Social Impact Assessment. All human remains have high heritage significance for their social value and may not be altered in any way without the permission of the families concerned and a permit from SAHRA.

The location of the Heritage Site of King Faku of the amaMpondo and the graves of other members of the Sigcau Royal family has been ascertained. Due to ritual restrictions informants were unable to take us to the site, but pointed out its locality from a viewpoint immediately east of the existing Mzintlava Bridge.

From Google Earth imagery the site is reckoned to be at approximately S31 25 38; E29 28 19 (Appendix I). Whilst it appears that proposed construction activities will have negligible physical impacts on the site, it is recommended that negotiations with the Royal family must take place prior to the final road alignment being determined and bridge construction implemented.

Without mitigation, the following impact ratings apply:

Intensity	high
Extent	site, with ramifications at all other levels due to the social significance of the burial
Duration	permanent
Probability	unknown
Status of the impact	cost
Degree of confidence	low to medium
Significance	high

With mitigation, the significance of the impacts will be moderate.

6.9 Sites of significance relating to the history of slavery in South Africa

None were identified within the proposed development area.

Impact – Not applicable.

6.10 Movable objects excluding any object made by a living person

None were identified within the proposed development area.

Impact – Not applicable.

The following table summarises the aforementioned impacts on heritage resources along the proposed routes, both with and without mitigation. We have assumed that, with mitigation, heritage resources will remain unaffected (by realigning the road, for example), or be altered or destroyed following mapping and / or excavation (archaeological sites and buildings) or exhumation and relocation (ancestral graves).

Issue / Impact	Resource	Without mitigation					With mitigation	
		Duration	Extent	Probability	Intensity	Significance	Intensity	Significance
Sections 1 - 3: Gonubie via Mthatha to Ndwalane	Graves	permanent	localised	definite	high	high	moderate	moderate
	Buildings	permanent	localised	probable	moderate	moderate		
Section 4: Ndwalane to Ntafufu river	Graves	permanent	localised	definite	high	high	moderate	moderate
	Buildings	permanent	localised	probable	moderate	moderate		
	Archaeological sites	permanent	localised	probable	moderate	moderate	slight	low
Section 5: Ntafufu river to Lusikisiki (Magwa Intersection)	Sigcau Royal burial site	permanent	localised	definite	high	high	moderate	moderate
	Graves	permanent	localised	definite	high	high	moderate	moderate
	Archaeological sites	permanent	localised	probable	moderate	moderate	slight	low
Section 6: Lusikisiki to Mtamvuna river	Graves	permanent	localised	definite	high	high	moderate	moderate
	Archaeological sites	permanent	localised	definite	moderate	moderate	slight	low
	Cultural landscape	permanent	extensive	definite	high	high	high	high
Section 7: Mtamvuna to Isipingo	Graves	permanent	localised	improbable	low	high	low	low

7. MITIGATION MEASURES

7.1 Specific

7.1.1 Places, buildings, structures and equipment

Any envisaged alteration or demolition of buildings older than 60 years along the entire route alignment will require application for a permit from the South African Heritage Resources Agency. This is particularly pertinent should the route alignment pass through the towns of Idutywa and / or Butterworth,.

7.1.2 Places to which oral traditions are attached or which are associated with living heritage

Within the Amadiba Tribal Authority area a heritage practitioner should be appointed to undertake an oral history recording project in order to capture significant places to which oral traditions are attached or which are associated with living heritage. Parameters for the study should be set by SAHRA, with due consideration of information already obtained through the Social Impact Assessment for this project.

7.1.3 Historical settlements and townscapes

No further mitigation measures required.

7.1.4 Landscapes and natural features

As for 7.1.2 above a heritage practitioner should be appointed to undertake a study within the Amadiba Tribal Authority area of culturally relevant local landscape and natural features, within parameters set by SAHRA.

7.1.5 Geological sites of scientific or cultural importance

It is unlikely that fossiliferous Mzamba strata will be exposed during construction of the proposed road, but such strata could be uncovered in borrow pits. The resident geological engineer should inform SAHRA and a specialist palaeontologist in the event that such strata or the basal conglomeratic marine unit to the red sands are exposed. This recommendation should be part of the protocol developed by a heritage practitioner (see 7.2). A permit from SAHRA is required for the alteration or destruction of any geological sites with scientific or cultural importance.

7.1.6 Archaeological sites

A permit from SAHRA or Amafa is required for the alteration or destruction of any archaeological sites.

If the Otto trading store remains will be affected, a permit must be obtained from SAHRA to remove or destroy it. A historian should investigate the site if this area is to be disturbed.

If the eastern bank of the Mzimvubu River in the vicinity of Ngqotsini will be affected, a heritage practitioner should be present at the onset of earthworks for this river crossing.

7.1.7 Palaeontological sites

It is unlikely that fossiliferous Mzamba strata will be exposed during construction of the proposed road, but such strata could be uncovered in borrow pits. The resident geological engineer should inform SAHRA and a specialist palaeontologist in the event that such strata or the basal conglomeratic marine unit to the red sands are exposed. This recommendation should be part of the protocol developed by a heritage practitioner (see 7.2). A permit from SAHRA is required for the alteration or destruction of any palaeontological sites.

7.1.8 Graves and burial grounds

Graves may not be altered in any way without the permission of the families concerned and a permit from SAHRA. The developer must cease all work immediately and notify SAHRA or Amafa if any grave or human remains are uncovered during the course of development activities.

Various guidelines and regulations for the removal of human remains include:

- Notification of the impending removals (using all relevant language media and notices at the grave site);
- Consultation with individuals or communities related or known to the deceased;
- Satisfactory arrangements for the curation of human remains and / or headstones in a museum, where applicable;
- Procurement of a permit from SAHRA;
- Appropriate arrangements for exhumation and re-interment;
- Observation of rituals or ceremonies required by the families.

7.1.9 Sites of significance relating to the history of slavery in South Africa

No further mitigation measures required.

7.1.10 Movable objects excluding any object made by a living person

No further mitigation measures required.

7.2 General

A heritage practitioner should:

- Complete a heritage impact assessment of the final route chosen for the highway, as well as the locations of new access roads, construction camps and all other infrastructure.
- Compile a protocol to be followed by the road construction contractors in the event that any heritage resources are discovered during construction activities.
- Compile and conduct training courses for all relevant contractor personnel to enable them to participate effectively in heritage resource management.
- Undertake regular monitoring as construction activities proceed.

These recommendations might coincide broadly with those proposed for other aspects of the environmental impact assessment, particularly the social component. Where possible, specialist fieldwork should be multi-disciplinary to minimise duplication of workshops and meetings, with concomitant reduction of financial costs.

8. ASSESSMENT OF ALTERNATIVE ROUTE ALIGNMENT OPTIONS

Site-specific alternative route alignments are described in Section 1.2.1.1 and offer no advantages in terms of impact on heritage resources over the preferred alignment, given the current level of information available – all alternatives have a similar potential for the presence of as-yet-unidentified heritage resources.

9. THE NO-GO OPTION

The Social Impact Assessment for this project concludes the following:

‘In the case of the N2 Toll Road the ‘do nothing option’ would mean that the current route would effectively remain as it is. For some stakeholders this is clearly the preferred option. The degree to which it should be considered as a feasible option and the time frames under which it remains as such is more an economic consideration than a social one ... All things considered then it is our opinion that, the social benefits of the project as assessed across the entire route, and if mitigated as suggested, outweigh the negative impacts and that the N2 Wild Coast Project would be socially beneficial for the provinces of the Eastern Cape and KwaZulu-Natal’ (Bews *et al* 2007).

In terms of the Heritage Resources Management Act, heritage practitioners are required to provide ‘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’.

Given the conclusion of the Social Impact Assessment that the social and economic benefits of the project outweigh the negative impacts, and the fact that satisfactory mitigation of heritage resources is possible, we believe that the no-go option has no necessary benefit for heritage resources.

This conclusion does not ignore the fact that the heritage impact assessment of the final route alignment, as well as the oral history and landscape studies recommended in this report, might propose changes to the alignment based on the discovery of as-yet-unidentified heritage resources, particularly ancestral graves.

10. IMPACTS ON THE TRADITIONAL SOCIO-CULTURAL WAY OF LIFE OF AFFECTED RURAL COMMUNITIES

The social impact assessment undertaken as part of this environmental impact assessment clearly describes the rural community that will be affected by the proposed project, along with the nature of potential impacts. Their 'traditional socio-cultural way of life' is dynamic and influenced by changes elsewhere in South Africa. The significance and value of both tangible and intangible heritage resources, as perceived by both resident communities and others (environmental specialists, tourists, politicians, and so forth), are equally subject to change and re-evaluation.

In this context, the impacts of the feasible alternatives on the 'traditional socio-cultural way of life' of affected communities may be viewed as follows:

- The no-go option – the toll road is not constructed. Changes will continue to occur to the landscape that constitutes arguably the most significant heritage resource (apart from ancestral graves) within the study area.
- Alternative route alignments – as stated above, these options offer no advantages in terms of impact on heritage resources over the preferred alignment. Changes to a 'traditional socio-cultural way of life' will be the same, directly affecting a different section of the resident community, but with very similar overall effects.

11. CONCLUSION

Our site-specific findings and recommendations are as follows:

- Places, buildings, structures and equipment – Any envisaged alteration or demolition of buildings older than 60 years along the entire route alignment will require a permit from the South African Heritage Resources Agency. This is particularly pertinent should the route alignment pass through the towns of Idutywa and / or Butterworth,
- Places to which oral traditions are attached or which are associated with living heritage – Part of the proposed development area is associated with the living heritage and oral traditions of the AmaDiba Tribal Authority. As a whole the place has medium to high heritage significance at the site specific, local and regional levels, with low to medium significance at all other levels. A heritage practitioner should be appointed to undertake an oral history recording project in the local area (up to five kilometres from the project area). Parameters for the study should be set by SAHRA, with due consideration of information already obtained through the Social Impact Assessment for this project.
- Historical settlements and townscapes – No formally protected historical settlements or townscapes occur within the proposed development area. No further mitigation is required.
- Landscapes and natural features – No formally protected landscapes or natural features occur within or adjacent to the route alignment. However, the entire AmaDiba Tribal Authority area, which broadly coincides with the Pondoland Centre of Endemism, may be considered as an integral part of an ethnographic landscape that has evolved over at least the last 1000 years due to a particular pattern of land use. This landscape has medium to high heritage significance at all levels. A heritage practitioner should be appointed to undertake an intensive study of the area and local landscape and natural features, within parameters set by SAHRA.

- Geological sites of scientific or cultural importance – No geological sites of scientific or cultural importance were identified within and immediately adjacent to the proposed route alignment. However, fossiliferous Mzamba strata, which have low to medium heritage significance at all levels for their scientific value, could be uncovered in borrow pits. The resident geological engineer should inform SAHRA and a specialist palaeontologist in the event that such strata or the basal conglomeratic marine unit to the red sands are exposed. This recommendation should be part of the protocol developed by a heritage practitioner (see below). A permit from SAHRA is required for the alteration or destruction of any geological sites with scientific or cultural importance.
- Archaeological sites – Four *izivivane* (stone cairns) occur next to the path on the western bank of the Mpahlane River. It is likely that these sites (which have low to medium significance at local levels for their historical and social values and could also be considered as structures and a place associated with oral history and / or living heritage) will be altered or destroyed by the proposed development. A permit from SAHRA is required for the alteration or destruction of these sites.

If the Otto trading store remains will be affected, a permit must be obtained from SAHRA to remove or destroy it. A historian should investigate the site if this area is to be disturbed.

If the eastern bank of the Mzimvubu River in the vicinity of Ngqotsini will be affected, a heritage practitioner should be present at the onset of earthworks for this river crossing.

- Palaeontological sites – No palaeontological sites were identified within and immediately adjacent to the proposed route alignment. However, fossiliferous Mzamba strata, with low to medium heritage significance at all levels for their scientific value, could be uncovered in borrow pits. The resident geological engineer should inform SAHRA and a specialist palaeontologist in the event that such strata or the basal conglomeratic marine unit to the red sands are exposed. This recommendation should be part of the protocol developed by a heritage practitioner (see below). A permit from SAHRA is required for the alteration or destruction of any palaeontological sites.
- Graves and burial grounds – graves and burial grounds have been identified during the Social Impact Assessment along the proposed alignments. The burial site of King Faku of the amaMpondo, and the graves of other members of the Sigcau Royal family are located close to the existing Mzintlava bridge, which is due for widening. Negotiations with the Royal family must take place prior to the final road alignment being determined. All human remains have high heritage significance for their social value and may not be altered in any way without the permission of the families concerned and a permit from SAHRA. The developer must cease all work immediately and notify SAHRA (or Amafa aKwaZulu-Natali) if any grave or human remains are uncovered during the course of development activities.
- Sites of significance relating to the history of slavery in South Africa – None were identified within the proposed development area. No further mitigation is required.
- Movable objects excluding any object made by a living person – None were identified within the proposed development area. No further mitigation is required.

In general, a heritage practitioner should:

- Complete a heritage impact assessment of the final route chosen for the highway, as well as the locations of new access roads, construction camps and all other infrastructure.
- Compile a protocol to be followed by the road construction contractors in the event that any heritage resources are discovered during construction activities.
- Compile and conduct training courses for all relevant personnel to enable them to participate effectively in heritage resource management.
- Undertake regular monitoring as construction activities proceed.

These recommendations might coincide broadly with those proposed for other aspects of the environmental impact assessment, particularly the social component. Where possible, specialist fieldwork should be multi-disciplinary to minimise duplication of workshops and meetings, with concomitant reduction of financial costs.

Site-specific alternative route alignments offer no advantages in terms of impact on heritage resources over the preferred alignment. This conclusion does not ignore the fact that the heritage impact assessment of the final route alignment, as well as the oral history and landscape studies recommended in this report, might propose changes to the alignment based on the discovery of as-yet-unidentified heritage resources, particularly ancestral graves.

In the context of a dynamic rural community, feasible alternatives in terms of impacts on heritage resources within a 'traditional socio-cultural way of life' may be viewed as follows:

- The no-go option – the toll road is not constructed. However, changes will continue to occur to the landscape that constitutes arguably the most significant heritage resource (apart from ancestral graves) within the study area.
- Alternative route alignments – changes to a 'traditional socio-cultural way of life' will be the same, directly affecting a different section of the resident community, but with very similar overall effects.

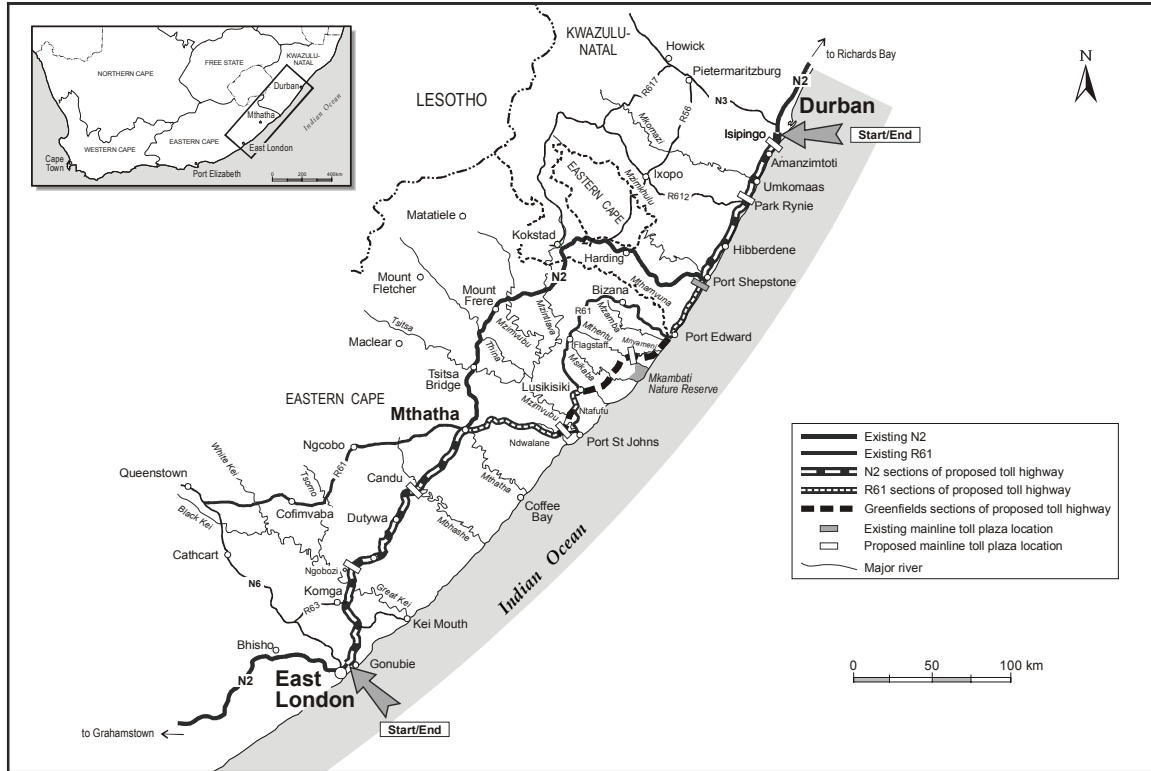
In terms of heritage resources we encountered no fatal flaws to the project if the proposed mitigation is followed. We have submitted this report to SAHRA and Amafa in fulfilment of the requirements of the Heritage Resources Management Act. According to Section 38(4) of the Act:

- The report shall be considered timeously by the Council which shall, after consultation with the person proposing the development, decide -
- (a) whether or not the development may proceed;
 - (b) any limitations or conditions are to be applied to the development;
 - (c) what general protections in terms of this Act apply, and what formal protections may be applied to such heritage resources;
 - (d) whether compensatory action shall be required in respect of any heritage resources damaged or destroyed as a result of the development; and
 - (e) whether the appointment of specialists is required as a condition of approval of the proposal.

The relevant SAHRA personnel are Dr Antonieta Jerardino (telephone 021 462 4502) and Mr Thanduxolo Lungile (telephone 043 722 1740/2/6). The relevant Amafa staff member is Ms Wesuwe Tshabalala (telephone 033 3946 543).

APPENDIX A

N2 Wild Coast Toll Highway – Route Alignment



APPENDIX B

A PRELIMINARY RECONNAISSANCE ARCHAEOLOGICAL HERITAGE SENSITIVITY SURVEY ALONG THE PROPOSED ROUTE FOR THE N2 WILD COAST TOLL ROAD BETWEEN DURBAN AND EAST LONDON: THE SECTION BETWEEN TOMBO AND MTAMVUNA

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SUMMARY

Proposal

The original proposal was to do a Phase 1 investigation of possible archaeological heritage sites of the 'green corridor' section between Tombo and Mtamvuna along the new proposed N2 Wild Coast Toll Road to be constructed between Durban and East London; to establish the range and importance of the heritage sites, the potential impact of the development and to make recommendations to minimise possible damage to these sites (Binneman 2001).

The survey

Due to the dense grass cover which limited visibility, only a few archaeological sites were found during the survey, these include:

1. Stone cairns, called *izivivane* on the western bank of the Mpahlane River.
2. Four rock shelters with archaeological living deposits in the Mnyameni River valley.
3. One shelter with presumably San rock paintings.
4. Late Iron Age (late farming communities) potsherds above the Mnyameni River.
5. Late Iron Age (late farming communities) potsherds on the eastern side of the Mzimvubu River.
6. Possible historic buildings and other remains at the Riverside Primary School.

Cultural sensitivity

The few archaeological sites found may create the idea that the route for the propose road is of low cultural sensitivity. This may not be the case and it is anticipated that many more archaeological sites may be found during construction of the road.

An important concentration of archaeological sites is located at the Mnyameni River, which include the only living deposits and rock paintings found during the survey. These sites are situated a few hundred metres above the waterfall at a proposed bridge crossing.

Recommendations

1. The archaeological sites located at the Mnyameni River are the only records of the early history (at least the past 2 000 years) of this part of the Transkei. These sites are non-renewable and protected by the National Heritage Resources Act of 1999. It is strongly recommended that the road be rerouted to avoid damage or destruction to the sites during the construction of roads and bridges.

2. Archaeologists should meet with construction managers/foremen prior to construction to inform them of the possible heritage sites and cultural material they may encounter and the procedures to follow when they find sites.
3. Archaeologists/historians should be notified at all times should archaeological/historical features be found during the construction phase.
4. Should it be necessary to remove material, it must be supported by a sufficient time and financial budget - a Phase 2 investigation, and if necessary also a Phase 3, to map and to remove important heritage material by sampling and/or excavations.
5. Managers must monitor that workers do not disturb, damage or collect cultural material from sites if they are located during the construction phase.

General remarks

Legislation concerning archaeological and historical material

The National Heritage Resources Act of 1999 protects all archaeological and historical sites and material older than 60 years, or which are considered to be worthy of conservation. No person may destroy, damage, alter, remove from its original site, or excavate any such material without a permit from the South African Heritage Resources Agency (SAHRA). If convicted of an offence in terms of the Act, a person could be liable for a fine or imprisonment, or both.

It must be emphasised that the conclusions and recommendations expressed in this heritage sensitivity survey are based on the visibility of cultural sites and may not therefore, reflect the true state of affairs. Many sites may be covered by soil and vegetation and will only be located once this has been removed. In the event of such finds being uncovered, archaeologists must be informed immediately so that they can investigate the importance of the sites and excavate or collect material before it is destroyed. The *onus* is on the developer to ensure that this agreement is honoured in accordance with the National Heritage Act of 1999.

THE SURVEY

Background

The desktop scoping survey conducted in April 2001, pointed out;

that the proposed road will be constructed in a region where little is known about the archaeological heritage and recommended that a phase 1 survey be conducted.

Due to the distance and terrain to be covered, suggested;

that areas where archaeological sites most likely would be found be identified and spot visits be made. For example river banks, flood plains and valleys. Sites are often visible in the sections of dongas or exposed by other soil erosion actions. This would provide information to 'map' possible sensitive areas where special care should be taken during the construction phase.

The survey, following the above suggestions, took place during July 2002. Many potentially sensitive archaeological heritage areas in different environments were visited along the proposed route. Dense knee high grass, however, made it virtually impossible to observe archaeological sites. Possible aids such as recently burnt areas, mole heaps, ploughed fields and dongas were investigated to find any traces of exposed material.

Areas investigated

The survey started on the east bank of the Mzamba River and was conducted on foot to the west bank of the Mpahlane River. The steep banks of both rivers displayed no potential for possible archaeological sites. The area between the two rivers was flat with gentle undulating hills. The dense grass proved a major problem in finding sites.

Four stone cairns, called izivivane, were found on the western bank at the top next to the path that crosses the Mpahlane River (31.06.21S; 30.08.10E). These stone features are found throughout the Eastern Cape, and apparently it was a Khoi custom followed by the Xhosa to place a stone on the cairn as a simple prayer for a safe journey (Hodgson 1982). The largest one was some 3 metres in diameter and 0,80 metres high. They are small and it would appear that no stones have been added to the cairn for some time. Local people could provide information on the age and importance of these features. These features are protected by the National Heritage Act of 1999 and a permit must be obtained from the South African Heritage Resources Agency before they may be removed or destroyed.

Mnyameni River Area

The survey continued from the Mpahlane River and several spot checks were made to the Mnyameni River. The steep sides of the Mnyameni River and its tributary, a few hundred metres above the waterfall, housed a large number of caves and shelters. Surprisingly, only four shelters on the southern bank of the Mnyameni River, all facing north, yielded small quantities of archaeological deposits and only one displayed a few rock paintings. The following archaeological sites were recorded:

Site 1

The small shelter measured 7 m wide, 7 m deep and approximately 7 m high at the entrance (31.08. 51S; 30.03.05E), with the wall extending another 12 metres. The black, fine, dusty living deposit is estimated to be some 0,20 m deep. Archaeological remains include black shale stone tools scattered on the floor and along the drip line, and some marine shell, which include *Patella miniata*, and *Dinoplax gigas*.

The only rock paintings found during the survey were situated in this shelter. The paintings are painted in red with fine detailed lines and consisted of a small group of some 11 human figures (others faded beyond recognition) walking in a straight line. Three are wearing long karosses, carrying long sticks and arrows. Some 10 m further along the cliff face is a delicate painting of a group of three small antelope (grysbuck?). One animal is lying, looking back towards the other two standing buck. This is a rare image not found often.

Site 2

Site 2 was a fairly large cave situated next to site 1 and measured 25 m wide, 12 m deep and approximately 12 m high at the entrance (31.08.52S; 30.03.54E). The roof slopes steeply to the rear and leaves little room for living activities. The loose, dusty living deposit is estimated to be some 0,20 m deep at places. A large number of stone tools (many utilised and retouched) manufactured of black shale and occasionally chalcedony along with some red ochre fragments were visible on the floor of the cave and along the drip line. A few thin walled potsherds were also found, but it is not known whether these are Stone Age pastoralists (Khoi) or Late Iron Age (late farming communities) in origin.

Large quantities of marine shell were present on the floor and in the drip holes and included, *Patella cochlear*, *P. tabularis*, *P. miniata*, *Dinoplax gigas*, *Thias*, sp., *Nassa* sp. and *Burnupena* sp.

Site 3

Site 3 was at a fairly large rock shelter situated some 25 m above the river, measuring 20 m wide, 10 m deep and some 7 m high at the drip line (31.08.54S; 30.03.59E). A thick layer of fine white river sand covered the floor. The archaeological material was visible at the entrance of the shelter and consisted of a few stone tools manufactured of black shale and fragmented marine shell.

Site 4

Site 4 was a large semi-circular cave with a low roof, measuring 20 m wide, 8 m deep, the roof supported by a pillar, some 2.5 m high and 5 m at the drip line (31.08.55S; 30.04.01E). The stony deposit was only a few centimetres deep, but large quantities of stone tools (utilised, retouched and small scrapers) manufactured of black shale and occasional chalcedony were visible on the floor and exposed in the drip holes. A number of thick walled potsherds (none decorated), probably of Late Iron Age origin were also found on the site. The marine shell remains were similar to the species found at the other sites.

Site 5

Site 5 was situated on the slope above the river valley and consisted of a few thin walled potsherds, probably of Late Iron Age origin, in a ploughed field (31.09.2S; 30.03.49E). The potsherds suggest that there was a Late Iron Age settlement in the vicinity. No other remains or features were found which could provide more information.

Mzimvubu River to Port St John's Road

Several spot checks were made between the Mnyameni and Mtentu Rivers and at the proposed crossings of the Mtentu and Msikaba Rivers and the eastern bank of the Mzimvubu River to the Port St John's/Umtata road connection. Special attention was given to the wide, flat riverbank (areas known to have been settled by early farming communities in the Transkei) along the Mzimvubu River (Prins 1993; Binneman 1996). Apart from a few potsherds found on the eastern bank, no other sites were located.

Site 6

A few small thin walled potsherds, probably of Late Iron Age origin were found on the eastern bank on a path leading down to the Mzimvubu River (31.31.53S; 29.29.27E). These potsherds may indicate that there was a Late Iron Age settlement in the vicinity.

A possible historical site may be situated at the Riverside Primary School Area (31.36.02S; 29.29.14E). According to the occupant, Mr D. Otto, a trading store was built there in 1901 (*vide* Mr J. Costello). If this is the case and remains are preserved (including rubbish dumps) a permit must be obtained from SAHRA to remove or destroy it. A historian should investigate the site if this area is to be disturbed.

Cultural sensitivity

The few archaeological sites located during the survey may create the idea that the area is of low cultural sensitivity. However, this may not be the case and it is believed that many archaeological sites may be found during the construction phase of the road and other associated activities such as access roads and the building of campsites. The dense grass cover caused a major problem in locating possible archaeological sites. Feely (1987), who surveyed large areas in the Transkei for archaeological sites and features, also remarked that the *archaeological visibility was reduced to zero* where and when the ground was covered by vegetation.

The scope of this report is not to explain why so few archaeological sites were found. The report is to motivate why those that were found, and those that may be found during construction, are important and why they should be protected from being damaged or destroyed. The Mnyameni River, the only area where a concentration of archaeological sites is located, is such a case. Although these sites are considered to be of low archaeological significance in terms of volume and depth of deposits, they were the only living sites found on the coastal foreland of this part of the Transkei. This, together with the fact that the only rock art site in the region was also found here, make this an important and sensitive cultural heritage location, which is also the only record of the early history of this part of the Transkei. These non-renewable archaeological resources are protected by the National Heritage Resources Act of 1999 and may not be damaged, destroyed or altered without a permit.

Recommendations

1. It is strongly recommended that the proposed road, which is proposed to pass directly over the archaeological caves and shelters at Mnyameni River, be rerouted to avoid damage or destruction to the sites during the construction of roads and bridges.
2. Due to the low visibility of possible archaeological sites, it is recommended that archaeologists should meet with construction managers/foremen prior to construction to inform them of the possible heritage sites and cultural material they may encounter and the procedures to follow when they find sites.
3. Managers must monitor that workers do not disturb, damage or collect cultural material from sites if they are located during the construction phase. Special care should be taken where there are rock art sites in the vicinity of construction sites.

4. Archaeologists/historians should be notified at all times should archaeological/historical features be found during the construction phase.

5. If any important features are found, work must be stopped and archaeologists informed to investigate. Should it be necessary to remove material, it must be supported by a sufficient time and financial budget - a Phase 2 investigation, and if necessary also a Phase 3, to map and to remove important heritage material by sampling and/or excavations.

APPENDIX C

LITERATURE REVIEW

Although the following references allude, for the most part, to the KwaZulu-Natal region of southern Africa, interregional cultural similarities and continuities allow us to extrapolate to the study area, where appropriate.

The general area is one of variable heritage resource significance and the following tables provide a brief summary of archaeological time periods:

E arly	1.5 million to 180 000 years ago	Only stone artefacts remain from
S tone		this time period, including large
A ge		choppers, cleavers and hand axes
M iddle	180 000 to 35 000 years ago	Stone tools smaller than in ESA;
S tone		include blades and flakes; human
A ge		and animal remains also found
L ater	35 000 years ago to the time	Variety of artefacts made from
S tone	of European settlement	organic and inorganic materials;
A ge		human remains, shell middens etc

E arly	400 – 500 AD	Mzonjani phase
I ron	500 – 700 AD	Msuluzi phase
A ge	700 – 900 AD	Ndondondwane phase
	900 – 1200 AD	Ntshekane phase
L ate	1200 – 1500 AD	Settlement by Nguni speakers
I ron	1500 – 1700 AD	Introduction of maize
A ge	1700 – 1850 AD	Pre-European settlement
	1850 AD to present	Colonial

Early and Middle Stone Age, Iron Age and historical sites have been variously but sparsely recorded in and around the study area. Early Stone Age stone scatters occur in raised beach gravels, eroded areas and ancient coastal dunes. No information is available on the foods eaten by the Early Stone Age people in south eastern Africa, but it can be assumed on the basis of evidence on Early Stone Age people elsewhere that their diet consisted primarily of animals and plant foods. It was also during this period that people learnt to control fire' (Mazel 1989: 3-5).

'Clear technological differences separate the Middle Stone Age from the Early Stone Age. Whereas Early Stone Age tools were generally core tools [choppers, handaxes, cleavers], Middle Stone Age tools were made of flakes and blades detached from the core [trapezoids, segments, scrapers, points, flakes, blades]. Handaxes and cleavers were absent...

'Relatively little is known about the particular types of food that the Middle Stone Age hunter-gatherers ate. Border Cave [situated in the Lebombo Mountains on the border between South Africa and Swaziland] is the only site from which information is at present available... Small quantities of a wide variety of animals were found in the Border Cave excavations. These included honey badger, dassie, Burchell's zebra, bushpig, warthog, hippopotamus, steenbok, oribi, mountain reedbuck, waterbuck, roan / sable, impala, blesbok, hartebeest / tsessebe, blue wildebeest, springbok, greater kudu, nyala, bushbuck, eland, Cape buffalo and possibly an extinct giant Cape horse (*Equus capensis*).

'A handful of seeds was also found at Border Cave, while grindstones, which may have been used in the processing of plant foods, have been recovered from the Middle Stone Age layers at Umhlatuzana Shelter [located between Durban and Pietermaritzburg]...

'Evidence of the manufacture of cultural articles from materials other than stone first appears during the Middle Stone Age. So also does evidence concerning religious practices, the final Middle Stone Age stage at Border Cave producing the earliest known burial so far attributed to the Middle Stone Age' (Mazel 1989: 6-8).

Recent excavations at Sibhudu Shelter, a near-coastal site located between the uMvoti and uMngeni rivers, promise to shed more light on the Middle Stone Age of the eastern seaboard (Wadley and Whitelaw 2007).

'The advent of the Iron Age saw not only the introduction of metallurgy. Of even greater significance was the introduction of agriculture, necessitating a settled, village way of life instead of the nomadic patterns of the Stone Age. It also provided for an appreciable increase in population density, as well as a more complex life-style. Richly decorated pottery is a hallmark of these early settlements. Domestic animals including cattle, sheep, goats and dogs were also a feature of the Iron Age, although current information indicates that they had already reached parts of South Africa, but apparently not Natal, during the Late Stone Age, through the agency of Khoisan herders...

'... the earliest Iron Age sites in South Africa, including Natal, relate to an eastern coastal and lowland cultural tradition with links as far north as the Kwale sites of eastern Kenya. This tradition has been named 'Matola', after a site in southern Mozambique, which provided close typological links between the Natal and eastern Transvaal sites¹. [In KwaZulu-Natal] almost all of them are on the belt of ancient dunes, which would have been covered by coastal forest at the time.

'In the St. Lucia area especially, sites are concentrated at the inland foot of the dunes, where they meet seasonally flooded grassland. It has been argued that these sites were the first choice of immigrant farmers because they afforded some open, but not flooded, space. The sandy soils are poor and leached but the accumulated forest humus would have ensured good crops for the first year or two after they had been cleared. Apart from being attracted by this agricultural potential, the [Mzonjani] people exploited the wild plant and animal resources of the forest and adjacent sea-shore.

'Although no direct evidence of agriculture has as yet been obtained from Natal sites, seeds of bulrush millet (a tropical African cultigen) have been recovered from [an Mzonjani] site in the Transvaal. Bulrush millet is still a favoured crop on the dunes around Kosi Bay. Evidence of domestic animals has yet to be found on any [Mzonjani] site and it seems likely that they were rare, if present at all. The forest environment would certainly have been unsuitable as pasture for domestic animals. Marine mussels may therefore have played an important part as a protein source in place of meat or milk' (Maggs 1989: 29-31).

Most Early Iron Age sites in Natal are later than the [Mzonjani] period and are classified according to ceramic styles [refer to the table above]...By this time villages, about four to five hectares in size and probably containing less than a hundred people, had become common in the lower-lying and savannah areas, below an altitude of 1 000 metres. They were most common along the major rivers and in the coastal belt, where there was good, deep soil, sweet year-round grazing, and timber for building and fuel (van Schalkwyk 1995).

'Diet was based on agriculture and pastoralism, with a little supplementary hunting, fishing and gathering of wild plants and shellfish. Crops identified from seeds include several grains (bulrush millet, finger millet and probably sorghum), and probably the African melon... Most villages had one or more iron smelting areas and therefore produced their own requirements' (Maggs 1989: 31-32).

The beginning of the Late Iron Age marked a period of significant change in pottery styles, attributable to both socio-political and demographic factors (Maggs 1989). Settlements were no longer located in river valleys, but were built on higher ground where homesteads would benefit from cooling breezes and good views for strategic purposes.

Steep slopes, wetlands and marshy areas were used for grazing domestic animals and gathering wild food and medicinal plants. Settlements appear to have been much smaller, implying that 'society underwent a change away from the large Early Iron Age villages and towards the individual family homesteads of the historic Nguni-speaking peoples (Maggs 1989: 35).

¹ This tradition is now known as Mzonjani in KwaZulu-Natal.

Artefacts on Iron Age homestead sites include ceramic sherds, upper and lower grindstones and human and animal bones. Metalworking sites are often located in areas where iron ore is available and associated debris includes furnace remains, slag, bloom and ceramic sherds.

'The evidence or written sources [from shipwrecked Portuguese and other European mariners, who traversed lowland and coastal Natal on their way northwards to Mozambique] shows that, by the 1550s, while the coastal sourveld of Pondoland was thinly inhabited, coastal Natal from the Mtamvuna northwards was already well populated. A settlement of twenty hemispherical huts built of poles and thatch is described as being typical of the coast at that time. A later report confirms that such 'small villages' were the homes of kinship groups, each under the authority of a senior man. There can have been little difference between these homesteads and those of the nineteenth century in Natal and Zululand.

'The agro-pastoral economy of the Iron Age prevailed throughout the coastal regions, with cultivation typically a combination of grains, legumes and vegetables of the pumpkin-melon family. There were three types of grains, one being sorghum and another a smaller-seeded millet, specific identification being difficult to establish from the old Portuguese documents. Vegetables included beans, African groundnuts (both legumes), gourds, watermelons and pumpkins, while sorghum was cultivated for its sweet pith as well as for its seeds...There is evidence to show that tobacco was being cultivated and smoked by 1686. Cattle, sheep and goats were seen in quantities, as were chicken from southern Natal northwards' (Maggs 1989: 39).

Archaeological studies documenting early farming communities in the former Transkei have been undertaken along the middle reaches of the uMzimvubu River (Prins and Granger 1993). Although this research occurred some distance inland from the study area, findings may be extrapolated to the coastal region to some extent. The first millennium (Early Iron Age) site of Ntsitsana was excavated, revealing two occupational phases dated to around AD 660 and AD 770.

'This study provided new information on early farming settlement in a relatively poorly researched area in south eastern Africa. Since the inception of serious academic research of Transkei, pleas have been made, by both anthropologists and historians [references] for information on African farmers in precolonial times. Such information, based on archaeological surveys and limited excavation, has accumulated slowly. There is good evidence, from ceramics and settlement location studies to show that first-millennium farming settlement in Transkei was an extension of that in Natal.

'Nevertheless, local variations in ceramic style and the organisation of space on settlements need to be researched. The archaeology of farming communities of the last two thousand years is poorly researched and could be the focus of large-scale investigation. Much more archaeological research into all aspects of the history of Transkei, such as the interaction between farmers and their herder and hunter-gatherer neighbours, is needed to provide an understanding of the historical factors that contributed to the shaping of the modern African societies of the region' (Prins and Granger 1993: 170).

APPENDIX D

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APPENDIX E**SIGNIFICANCE AND VALUE OF HERITAGE RESOURCE SITES**

The following guidelines for determining site significance were developed by the South African Heritage Resources Agency in 2003. We use them in conjunction with tables of our own formulation (see that for the Southern African Iron Age, below) when considering intrinsic site significance and significance relative to development activities, as well as when recommending mitigatory action.

Type of Resource

Place

Structure

Archaeological Site

Palaeontological Site

Geological Feature

Grave

Type of Significance

1. Historical Value

It is important in the community, or pattern of history

- Importance in the evolution of cultural landscapes and settlement patterns
- Importance in exhibiting density, richness or diversity of cultural features illustrating the human occupation and evolution of the nation, Province, region or locality.
- Importance for association with events, developments or cultural phases that have had a significant role in the human occupation and evolution of the nation, Province, region or community.
- Importance as an example for technical, creative, design or artistic excellence, innovation or achievement in a particular period

It has strong or special association with the life or work of a person, group or organisation of importance in history

- Importance for close associations with individuals, groups or organisations whose life, works or activities have been significant within the history of the nation, Province, region or community.

It has significance relating to the history of slavery

- Importance for a direct link to the history of slavery in South Africa.

2. Aesthetic Value

It is important in exhibiting particular aesthetic characteristics valued by a community or cultural group

- Importance to a community for aesthetic characteristics held in high esteem or otherwise valued by the community.
- Importance for its creative, design or artistic excellence, innovation or achievement.
- Importance for its contribution to the aesthetic values of the setting demonstrated by a landmark quality or having impact on important vistas or otherwise contributing to the identified aesthetic qualities of the cultural environs or the natural landscape within which it is located.
- In the case of an historic precinct, importance for the aesthetic character created by the individual components which collectively form a significant streetscape, townscape or cultural environment.

3. Scientific Value

It has potential to yield information that will contribute to an understanding of natural or cultural heritage

- Importance for information contributing to a wider understanding of natural or cultural history by virtue of its use as a research site, teaching site, type locality, reference or benchmark site.
- Importance for information contributing to a wider understanding of the origin of the universe or of the development of the earth.

- Importance for information contributing to a wider understanding of the origin of life; the development of plant or animal species, or the biological or cultural development of hominid or human species.
- Importance for its potential to yield information contributing to a wider understanding of the history of human occupation of the nation, Province, region or locality.

It is important in demonstrating a high degree of creative or technical achievement at a particular pe

- Importance for its technical innovation or achievement.

4. Social Value

It has strong or special association with a particular community or cultural group for social, cultural or spiritual reasons

- Importance as a place highly valued by a community or cultural group for reasons of social, cultural, religious, spiritual, symbolic, aesthetic or educational associations.
- Importance in contributing to a community's sense of place.

Degrees of Significance

Rarity

It possesses uncommon, rare or endangered aspects of natural or cultural heritage

- Importance for rare, endangered or uncommon structures, landscapes or phenomena.

Representivity

It is important in demonstrating the principal characteristics of a particular class of natural or cultural places or objects

Importance in demonstrating the principal characteristics of a range of landscapes or environments, the attributes of which identify it as being characteristic of its class.

Importance in demonstrating the principal characteristics of human activities (including way of life, philosophy, custom, process, land-use, function, design or technique) in the environment of the nation, Province, region or locality.

Sphere of Significance	High	Medium	Low	
International	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
National		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Provincial	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Regional		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Local	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Specific Community	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	-----

What other similar sites may be compared to this site?

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Southern African Iron Age

	Significance		
	- low	- medium	- high
Unique or type site			Yes
Formal protection			Yes
Spatial patterning	?Yes	?Yes	?Yes
Degree of disturbance	75 – 100%	25 – 74%	0 – 24%
Organic remains (list types)	0 – 5 / m ²	6 – 10 / m ²	11 + / m ²
Inorganic remains (list types)	0 – 5 / m ²	6 – 10 / m ²	11 + / m ²
Ancestral graves			Present
Horizontal extent of site	< 100m ²	101 – 1000m ²	1000 + m ²
Depth of deposit	< 20cm	21 – 50cm	51 + cm
Spiritual association			Yes
Oral history association			Yes
➤ Research potential			High
➤ Educational potential			High

Please note that this table is a tool to be used by qualified cultural heritage managers who are also experienced site assessors.

APPENDIX F**CRITERIA FOR THE IDENTIFICATION AND MANAGEMENT OF CULTURAL LANDSCAPES**

The American National Parks Services sets out various criteria for the identification and management of cultural landscapes:

'Cultural landscapes are complex resources that range from large rural tracts covering several thousand acres to formal gardens of less than an acre. Natural features such as landforms, soils and vegetation are not only part of the cultural landscape, they provide the framework within which it evolves. In the broadest sense, a cultural landscape is a reflection of human adaptation and use of settlement, land use, systems of circulation and the natural resources and is often expressed in the way land is organised and divided, patterns of types of structures that are built. The character of a cultural landscape is defined both by physical materials, such as roads, buildings, walls and vegetation, and by use reflecting cultural values and traditions.

'Identifying the character-defining features in a landscape and understanding them in relation to each other and to significant historic events, trends and persons allows us to read the landscape as a cultural resource. In many cases, these features are dynamic and change over time. In many cases, too, historical significance may be ascribed to more than one period in a landscape's physical and cultural evolution.

'Cultural landscape management involves identifying the type and degree of change that can occur while maintaining the character-defining features. The identification and management of an appropriate level of change in a cultural landscape is closely related to its significance. In a landscape significant for its association with a specific style, individual, trend or event, change may diminish its integrity and needs to be carefully monitored and controlled. In a landscape significant for the pattern of use that has evolved, physical change may be essential to the continuation of the use. In the latter case, the focus should be on perpetuating the use while maintaining the general character and feeling of the historic period(s), rather than on preserving a specific appearance.

'A cultural landscape is a geographic area, including both natural and cultural resources, associated with a historic event, activity or person. The National Park Services recognises four cultural landscape categories: historic designed landscapes, historic vernacular landscapes, historic sites and ethnographic landscapes. These categories are helpful in distinguishing the values that make landscapes cultural resources and in determining how they should be treated, managed and interpreted...

'The four cultural landscape categories are not mutually exclusive. A landscape may be associated with a significant event, include designed or vernacular characteristics and be significant to a specific cultural group.'

APPENDIX G**Table 1 Impact assessment criteria and rating scales**

CRITERIA	RATING SCALES
Intensity (The expected magnitude or size of the impact)	<ul style="list-style-type: none"> • Negligible • Low - where the impact affects the environment in such a way that natural, cultural and social functions and processes are minimally affected • Medium - where the affected environment is altered but natural, cultural and social functions and processes continue albeit in a modified way; and valued, important, sensitive or vulnerable systems or communities are negatively affected • High - where natural, cultural or social functions and processes are altered to the extent that it will temporarily or permanently cease; and valued, important, sensitive or vulnerable systems or communities are substantially affected
Extent (The predicted scale of the impact)	<ul style="list-style-type: none"> • Site-specific • Local (immediate surrounding areas) • Regional (Eastern Cape or KwaZulu-Natal) • National
Duration (The predicted lifetime of the impact)	<ul style="list-style-type: none"> • Short-term (0 to 5 years) • Medium term (6 to 15 years) • Long term (16 to 30 years) - where the impact will cease after the operational life of the activity either because of natural processes or by human intervention • Permanent - where mitigation either by natural process or by human intervention will not occur in such a way or in such a time span that the impact can be considered transient
Probability (The likelihood of the impact occurring)	<ul style="list-style-type: none"> • Improbable – where the possibility of the impact materialising is very low • Probable – where there is a good possibility (<50% chance) that the impact will occur • Highly probable – where it is most likely (50-90% chance) that the impact will occur • Definite – where the impact will occur regardless of any prevention measures (>90% chance of occurring)
Status of the impact	Here it is stated whether the impact is positive (a “benefit”), negative (a “cost”) or neutral
Degree of confidence (The specialist’s degree of confidence in the predictions and/or the information on which it is based)	<ul style="list-style-type: none"> • Low • Medium • High

The significance of the potential impacts will be determined according to the core criteria for determining significance ratings, namely the extent, duration and intensity of the impacts to an affected party or the affected environment. Specialists will assign significance ratings to potential impacts before and after mitigation as per the convention for assigning significance ratings provided in Table 9.2 below.

Table 2 Convention for assigning significance ratings

SIGNIFICANCE RATING	DESCRIPTION (in terms of intensity, extent and duration)
VERY HIGH Significance	Impacts could be: EITHER of high intensity at a regional level and endure in the long term; OR of high intensity at a national level in the medium term; OR of medium intensity at a national level in the long term.
HIGH Significance	Impacts could be: EITHER of high intensity at a regional level and endure in the medium term; OR of high intensity at a national level in the short term; OR of medium intensity at a national level in the medium term; OR of low intensity at a national level in the long term; OR of high intensity at a local level in the long term; OR of medium intensity at a regional level in the long term.
MEDIUM Significance	Impacts could be: EITHER of high intensity at a local level and endure in the medium term; OR of medium intensity at a regional level in the medium term; OR of high intensity at a regional level in the short term; OR of medium intensity at a national level in the short term; OR of medium intensity at a local level in the long term; OR of low intensity at a national level in the medium term; OR of low intensity at a regional level in the long term.
LOW Significance	Impacts could be: EITHER of low intensity at a regional level and endure in the medium term; OR of low intensity at a national level in the short term; OR of high intensity at a local level and endure in the short term; OR of medium intensity at a regional level in the short term; OR of low intensity at a local level in the long term; OR of medium intensity at a local level and endure in the medium term.
VERY LOW Significance	Impacts could be: EITHER of low intensity at a local level and endure in the medium term; OR of low intensity at a regional level and endure in the short term; OR of low to medium intensity at a local level and endure in the short term.
NOT APPLICABLE	No impact.

Additional criteria to be considered which could increase the significance rating of the potential impact, if deemed justified by the specialist, are the following:

- Permanent/irreversible impacts (as distinct from long term, reversible impacts);
- Potentially substantial cumulative effects; and
- High level of risk or uncertainty, with potentially substantial negative consequences.

Criteria to be considered which could decrease the significance rating if deemed justified by the specialist, with motivation, include:

- Improbable impacts, where the confidence level in the prediction is high.

APPENDIX H**STATEMENT OF INDEPENDENCE AND ABILITY**

We declare that Len van Schalkwyk, Beth Wahl and eThembeni Cultural Heritage have no financial or personal interest in the proposed development, nor its developers or any of its subsidiaries, apart from in the provision of heritage assessment and management consulting services.

Len van Schalkwyk and Beth Wahl are equal partners in eThembeni Cultural Heritage and the following synopsis of our respective qualifications and experience demonstrates our ability to complete heritage impact assessments. We are accredited by Amafa aKwaZulu-Natali to complete heritage impact assessments in KwaZulu-Natal, and by the Cultural Resources Management section of the Association of South African Professional Archaeologists to do so in the rest of South Africa.

Len has a master's degree in archaeology (specialising in the history of early farmers in southern Africa) from the University of Cape Town and sixteen years' experience in cultural heritage management. He left his position as assistant director of Amafa aKwaZulu-Natali, the provincial cultural heritage authority, to start eThembeni. Len has worked on projects as diverse as the establishment of the Ondini Cultural Museum in Ulundi, the cultural management of Chobe National Park in Botswana and various archaeological excavations and oral history recording projects. He was part of the writing team that produced the KwaZulu-Natal Heritage Act, 1997. Len has worked with many rural communities to establish integrated heritage and land use plans and speaks good Zulu.

Beth has an honours degree in African studies (majoring in archaeology and sociology) from the University of Cape Town and is completing her masters in heritage and tourism at the University of KwaZulu-Natal. Most recently she was employed by Amafa aKwaZulu-Natali as head of archaeology, which position she left to start eThembeni. Beth was a co-developer of the cultural heritage management plan for the uKhahlamba Drakensberg Park World Heritage Site and has developed and implemented training programmes for community guides and members of the public. Much of this training has focussed on the rock paintings of the uKhahlamba (Drakensberg) mountains.

❖ **Heritage impact assessments**

Such assessments are required as part of Environmental Impact Assessments by the KwaZulu-Natal Heritage Act 1997, the South African Heritage Resources Management Act 1999 and all national and provincial environmental legislation. We have completed numerous projects and Amafa aKwaZulu-Natali and the South African Heritage Resources Agency have supported our recommendations, without exception. The following projects are a sample of our work during 2005 and 2006:

Eskom power lines

- Braamhoek integrated power supply for PBA International
- Obanjeni, Mtunzini substation and power lines for SiVEST Environment and Planning
- Majuba Mfolozi power lines for BKS Environmental Management Division
- Idwala Carbonates for Stemele Bosch Africa
- Braamhoek power lines for Ludloko Developments

Housing, office and game estate developments

- Shakaskraal residential and commercial estate for ACER (Africa)
- Bird Valley Estate, Cramond; Camdeboo, Hilton and Sundara Estate, Oliviershoek for Alletson Ecologicals
- Muluja Heights, uKhahlamba Drakensberg for Brousse-James & Associates
- Lot 938 Port Edward for Buk'Indalo Consultancy cc
- Uitvlugt equestrian and wildlife estate, Pietermaritzburg for DR A'Bear & Associates
- New Forest, Dargle for Environmental Assessments cc
- Burlington Greenfield, Queensburgh; Hillary, Durban; Umkhumbaan, Cato Manor; Rem of Lot 125 Ifafa; Lot 6417 Tongaat, Westbrook Beach, Erf 121 Bazley Beach and Rem of Lot 1 Umzumbe for Environmental Solutions
- Intathakusa Retreat, Inanda for futureWORKS!
- Alverstone, Assagay for Gary van Wyk and Scott Gelder
- Bishopstowe; Brookdales, Howick; Himeville; Kamberg; Northington, Mooi River; Phinda Game

Reserve; Rietvallei equestrian estate, Lidgetton; Rietvlei, Craigeiburn; Riversdale, Himeville; Spring Grove, Nottingham Road;

- Inhluzani, Dargle / Impendle; Umdloti; Lot 535 Kloof; Meycol Farm, uThukela Mouth; New Guelderland, Blythedale Beach; Simbithi eco-estate, Shakas Rock
- Zinkwazi Lagoon Lodge and forest estate for Indiflora cc Environmental Services
- Umbogintwini golf course for Kerry Seppings Environmental Management Services
- Zwelisha, Bergville for McFerran & Associates
- Executive Village, Umhlanga Triangle and Umhlanga New Town Centre for Moreland Developments (Pty) Ltd
- Cherry Farm, Port Shepstone; Kingthorpe equestrian estate, Pietermaritzburg; San Marina estate, Marina Beach; Shelly Ridge, Marburg Commonage; Sunrise Bay eco-estate; The Plantation agri eco-estate, Ramsgate; Uplands, Margate for NMH Consulting
- Buffelshoek, Winterton for Peter Jewell Consulting Services
- Umdloti Lagoon Valley and KwaDabeka C, Durban for SiVEST Environment and Planning
- Garden Park residential and commercial development for Spencer Gore Construction
- Manzengwenya dive camp for Strategic Environmental Focus (Pty) Ltd
- Balcomb, Mtunzini; Braeside Farm, Umhlali; Hillside farm, Umhlali; Helmsley Farm, Umhlali; Lot 617 Sheffield Beach; Mtikini, Ulundi; Palm Lakes, Umhlali; Tara Estate, Salt Rock for Sustainable Development Projects
- Allemans Drift and Waterford, Howick for WSP Environmental
- Almond Bank, Pietermaritzburg for Afzelia Environmental Consultants cc
- Nodunga and Cele-Nhlangweni for CHS Developments
- Eendvogel Vley and Gordon Hill, Ladysmith for DEK Simpson Professional Land Surveyors
- Mhlumayo housing for Inkonjane Developments

Road upgrades

- Road 1B Mkhazeni, Mgai farm road, Esifubeni road and Sani Pass Phase 1 for ACER (Africa)
- Ncengeni road, Tugela Ferry for J Mitchell & Associates
- Vukani Phase 2, Inanda for Pravin Amar Development Planners
- P230 road, Empangeni / Eshowe and Zwelimbomvu road for Terratest Incorporated
- Hillcrest roads for WSP Environmental

Bridge construction

- Bridge 1 Batshe and Bridge 18 Diki for ACER (Africa)
- Mfule River bridge, Nkwalini for Eyethu Engineers

Water supply projects

- Fairbreeze mine and Simdlangentsha for ACER (Africa)
- Makhabeleni, Masihambisane and Ntanzi for Saunders & Wium Trust
- Ozwathini / Mathulini and Wosiyane, Emalangeni and Cibane for SiVEST Environment and Planning
- KwaDeyi / St Faiths, KwaFodo and Stuartsville for Stemele Bosch Africa
- KwaGququma for Terratest Incorporated
- Albert Falls and south coast water supply system, Amanzimtoti to Umzinto / Scottburgh for Umgeni Water Amanzi

Dams

- Nsami, Molepo and Acornhoek dams, Limpopo Province for Cave Klapwijk & Associates
- Sundara, Oliviershoek for Alletson Ecologicals

Virgin soil assessments

- Ideal View and Mid-Selbourne farms, Underberg for Alletson Ecologicals

Other

- Gautrain tunnel and portal variants, Johannesburg for Bohlweki Environmental
- Gautrain route variants, Tshwane for Felehetsa Environmental (Pty) Ltd
- Ermelo Majuba rail realignments for Cave Klapwijk & Associates
- Nondabuya and Welcome agricultural development programmes for ACER (Africa) and Institute for Natural Resources
- Ntingwe tea estate, N11 and N12 borrow pits for ACER (Africa)
- Ashburton quarry, Pietermaritzburg and Idwala mining, Port Shepstone for Council for Geoscience
- King Matiwane cultural village for NDG Africa
- Alton North ferrochrome smelter, Richards Bay for CSIR Environmentek
- Chieveley, KwaDlamini, Injasuthi and Elandskraal base stations for David Totman & Associates

HERITAGE IMPACT ASSESSMENT OF THE PROPOSED N2 WILD COAST TOLL HIGHWAY

- Msukeni and Lugelweni ecotourism developments, Eastern Cape for Environmental and Rural Solutions
- KwaBulawayo tourism development for ZAI Consultants
- Avon and Georgedale peaking power plants for Environmental Impact Management Services (Pty) Ltd
- Riverside industrial park, Durban for Environmental Planning & Design
- Port Shepstone commercial development for Environmental Solutions
- Nquthu artefact collection for Ernst Cloete & Associates
- Braamhoek Pumped Storage Scheme impact assessment and monitoring for Eskom
- Erf 50 Cato Ridge and Westway commercial developments for Guy Nicolson Consulting cc
- Wellington wine estate, Rosetta for Harbour Rocks Properties (Pty) Ltd
- Enyokeni, KwaKhangela for SiVEST Environment and Planning
- Nanxing mining, Wartburg for Terratest Incorporated
- Sappi Saiccor Amakhulu expansion, Umkomaas and underground cable installation, Richards Bay for WSP Environmental
- 10 000BC filming location, Garden Castle for Brousse-James & Associates
- Heritage resources component of the KwaDukuza Strategic Environmental Assessment for SiVEST Selatile Moloji

APPENDIX I



APPENDIX J

12 March 2008
Mr Faud Fredericks
CCA Environmental (Pty) Ltd.
POBox 10145
Caledon Square
7905

ENVIRONMENTAL IMPACT ASSESSMENT OF THE PROPOSED N2 WILD
COAST TOLL HIGHWAY: PEER REVIEW OF SPECIALIST CULTURAL AND
HISTORICAL HERITAGE STUDY

Dear Mr Fredericks

Attached to this letter are my detailed comments reviewing the Thembeni Cultural Heritage assessment and report. They are organised in accord with the terms of reference furnished by CCA Environmental. This letter gives my specific recommendations.

The eThembeni study addresses shortcomings in the 2002 Heritage Sensitivity Survey and in particular concerns about the wider range of heritage resources that are relevant. It provides a basis for moving the assessment process forward. My recommendation is the study is accepted as fulfilling the terms of reference under which it was done.

The study does not significantly increase the knowledge gained from field observations over the 2002 report that was titled a preliminary reconnaissance. The reason is the low visibility due to the vegetation cover. The vegetation cover primarily affects the visibility of possible occurrences of resources like Stone Age and Iron Age artefacts. These may occur anywhere in the landscape but may be more frequently associated with valleys. This is a concern that could not be addressed fully at the stage when the eThembeni study was undertaken but can be addressed when the road project is at a more advanced stage. It is recommended that when the road alignments and river crossings are finalised and visibility is increased by some clearing of vegetation a supplementary inspection by a heritage specialist be carried out. This supplementary inspection could be of sections of the final route in different terrain types with the objective determining the degree to which the vegetation cover has limited the discovery of any heritage resources.

The Thembeni report recommends monitoring of construction and training of workers to minimise impacts on heritage resources. This recommendation would represent a further stage in assessment process to cope with any later chance discoveries. It would complement but not preclude the need for the prior supplementary inspection recommended here.

Yours sincerely

HJ Deacon

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Peer review of the assessment and report by Thembeni Cultural Heritage for CCA Environmental (Pty) Ltd on behalf of The South African National Roads Agency Limited, dated 05 February 2008.

1. Assess whether the specialist study has complied with its terms of reference.

The terms of reference are set out in two parts, general and project specific. The general terms of reference include reviewing previous specialist reports, updating the existing information and ensuring all relevant issues like potential impacts and shortcomings or gaps in information are addressed. This is to compensate for any inadequacies in a previous round of reporting. Appended is a 2002 preliminary reconnaissance archaeological heritage sensitivity survey report, which is of limited scope and is the only document concerned. The findings of that survey are integrated in the report as stipulated. The general terms of reference include some seventeen points common to all the specialist studies to ensure accord to the EIA regulations and NEMA principles. Most of these are covered in the project specific terms of reference that have to do with historical heritage and sites of spiritual and religious significance, essentially impacts on the tangible and intangible heritage. The requirement is that these impacts be identified and the potential impacts assessed with the proposal of feasible alternatives where negative. The requirement is also to describe and assess the potential impacts on the traditional way of life and to identify any necessary alternatives to minimise these in conjunction with a separate social study. The requirements are in accord with nature and scope of impact assessments as set out in the National Heritage Resources Act (1999).

The report gives the sense that compliance with the terms of reference, both general and project specific, was taken seriously and attempts made comply fully.

2. Assess whether adequate consideration is given, where appropriate, to the legal, policy, and/or planning context of direct relevance to the specialist study.

The National Heritage Resources Act (1999) provides the legislative requirements for heritage impact assessments. This proposed development requires an assessment because it is a road more than 300 m in length. This is recorded in the introduction to the report. Further the observations and mitigations contained in the report (pages 15-19) are structured in terms of what are defined as heritage resources in Section 3 (2) of the Act.

As part of the proposed development, section 7, Mthamvuna River-Isipingo Interchange, is in KwaZulu-Natal, Act No.10 for the province is relevant. The report does state that applications for any necessary permission for related activities outside the road reserve would have to be made to Amafa, the KwaZulu-Natal heritage agency. The rest of the route is through the Eastern Cape and in that case the relevant authority is SAHRA (South African Heritage Resources Agency). The report gives full contact details for both agencies with the admonition that any alteration, disturbance or destruction of heritage resources requires permission from the relevant agency.

The report thus gives full consideration to the legal requirements.

3. Assess the study approach, technical content and assessment methodology of the specialist study to determine whether it is credible.

The approach adopted was to focus the field survey on section of the route that deviate from existing roads, which is credible. These are the section 4 from Ndwalane to the Ntafufu River and the section 6 from Lusikisiki to Mthamvuna River. There are alternative routes under consideration for these sections but on the limited field observations the report suggests there are no heritage reasons to exclude any of the alternatives. Without finality on the routing the detailing of more specific local impacts, if any, is not possible. The field observations have been limited because subsurface exposures are few and the vegetation rank. This is particularly relevant to recording occurrences of what may be expected to be the

most common heritage objects in the landscape, Stone Age artefacts and Iron Age pottery. Provision for such recording will have to be made in a follow up stage and supplemented by environmental monitoring during the construction phase.

The construction phase in these two sections of the road and in section 5 from Ntafufu River to Lusikisiki will involve bridge construction and other works. The archaeology of the former Transkei is poorly known but it is apparent that Early Iron Age settlement was primarily in the valleys whereas Later Iron Age settlements occur on the interfluvies as well. The report does mention the valley association with the Early Iron Age but this predictive model indicates the need once the route is finalised to flag all bridge construction locations as potentially sensitive.

The assessment methodology used is systematic and credible.

4. Assess the adequacy of information used and indicate whether there are any obvious information gaps, omissions or inaccuracies which need to be addressed.

As noted the field observations have provided limited information. The main field information comes from the 2002 archaeological heritage sensitivity survey that is labeled as a preliminary reconnaissance. The subsequent surface survey considered in this report has added to that information but primarily on the intangible aspects of heritage. The information is enough to indicate the classes of heritage resources that may be impacted. The obvious gap is in the detail of resources along the final route. It is only once the routes in sections 4-6 of the road and the bridge sites are confirmed that site-specific impacts, if any, can be assessed. A preliminary reconnaissance survey of particularly archaeological resources cannot be seen to provide adequate information and this potential shortcoming needs to be addressed.

5. Assess whether the significance ratings given to potential impacts are reasonable and reliable.

The report rates a set of criteria, extent, duration, probability and cost-benefit of impacts on appropriate scales. In addition it rates the significance of the impacts on a graded scale from very high to very low according to degrees of intensity and duration. These ratings are applied systematically and fairly in the report.

6. Assess whether the recommendations of the study with regard to the most appropriate alternatives are sound and defensible.

The recommendations are set out in the executive summary and not the conclusions to the report. The site-specific conclusions are ordered following the general principles of the National Heritage Act (1999) Section 3 (2). One is that if the routing of the road passes through Idutywa and /or Butterworth upgrading and widening may threaten buildings older than 60 years protected under the Act. Demolition would require a permit. This recommendation is appropriate but it is worth noting that the same protection is afforded to any places, buildings, structures and equipment of that antiquity anywhere along the whole route from Gonube to Isipingo.

The Amadiba Tribal Authority area is mentioned in terms of an important centre for oral traditions and living heritage and again in terms of being a cultural landscape with the recommendations in each case that a heritage practitioner be appointed to undertake any necessary studies. Without sight of the Social Impact Assessment report and its recommendations it is difficult to evaluate these recommendations and the degree to which they overlap. The statement that one of these studies should 'record local perceptions of past, current and future land uses, within the context of potential road construction activities' seems particularly vague.

It is the palaeontological rather than geological resources that may be impacted by road construction activities although the risk would seem low. There are adequate procedures for reporting any finds of fossils to the relevant heritage agency. The same procedures apply to reporting archaeological finds and the recommendations include mention of the few specific resources known. The eastern bank of the Mzimvubu River gets special mention requiring a heritage practitioner to be present at the onset of earthworks for this river crossing. It would be appropriate to suggest all river crossings deserve to be monitored. The recommendations in respect of archaeological resources could and even should make provision for a more complete assessment of road sections 4-6 than that of the 2002 preliminary survey once the routes are finalised. Human burials can occur anywhere in the landscape and are not predictable. In as far as possible avoidance is the principle to adopt in road alignment. There are established protocols for reporting them given in the report.

The other recommendations have to do with environmental monitoring which will be part of the integrated project management system.

The recommendations are basically sound and defensible. The important conclusions are that on heritage grounds the alternative route alignments have equal merit and that satisfactory mitigation of any on heritage resources will be possible. This too may be defensible but only with adequate site recording and monitoring.

7. State any alternative viewpoints concerning the issues presented in the report, if any, giving explicit reasons for your particular stance.

A concern reflected in comments under different headings in this review is the paucity of information from field observations particularly on archaeological resources. Undue reliance cannot be placed on a survey, the 2002 survey, that is preliminary and at a reconnaissance level especially when its author emphasises its incomplete nature. That issue needs to be addressed.

8. State whether you believe that any key uncertainties or risks, and/or assumptions underpinning the assessment, have been sufficiently highlighted in the study.

The key uncertainties have been highlighted.

Further comments

Minor corrections to the report noted are:

Page 10 3.1, 'areas (ilali)as a' – italics.

Bews et al. 2007 in the text but not bibliography.

King, T.F. given as 1989 in bibliography but as 1978 in the text.

The report mentions photographs and maps supplied to SAHRA but as a stand-alone report it is inadequately illustrated. The map supplied in Appendix A is not fully annotated and sites with coordinates mentioned in the text are not plotted on a map.

Review Comments**Responses**

<p>3. Assess the study approach, technical content and assessment methodology of the specialist study to determine whether it is credible. ...the need once the route is finalised to flag all bridge construction locations as potentially sensitive.</p>	<p>Addressed in the final draft report by the recommendation that a heritage practitioner should complete a heritage impact assessment of the final route chosen for the highway, as well as the locations of new access roads, construction camps and all other infrastructure.</p>
<p>4. Assess the adequacy of information used and indicate whether there are any obvious information gaps, omissions or inaccuracies which need to be addressed. ...The obvious gap is in the detail of resources along the final route. It is only once the routes in sections 4-6 of the road and the bridge sites are confirmed that site-specific impacts, if any, can be assessed. A preliminary reconnaissance survey of particularly archaeological resources cannot be seen to provide adequate information and this potential shortcoming needs to be addressed.</p>	<p>As above</p>
<p>6. Assess whether the recommendations of the study with regard to the most appropriate alternatives are sound and defensible. ...The recommendations are set out in the executive summary and not the conclusions to the report...Demolition would require a permit. This recommendation is appropriate but it is worth noting that the same protection is afforded to any places, buildings, structures and equipment of that antiquity anywhere along the whole route from Gonubi to Isipingo.</p>	<p>Corrected in executive summary, body of report and conclusion.</p>
<p>6. The Amadiba Tribal Authority area is mentioned in terms of an important centre for oral traditions and living heritage and again in terms of being a cultural landscape with the recommendations in each case that a heritage practitioner be appointed to undertake any necessary studies. Without sight of the Social Impact Assessment report and its recommendations it is difficult to evaluate these recommendations and the degree to which they overlap. The statement that one of these studies should 'record local perceptions of past, current and future land uses, within the context of potential road construction activities' seems particularly vague.</p>	<p>We believe that SAHRA has the capacity to identify the parameters for these recording projects, and that this heritage impact assessment should not attempt to be too prescriptive. Accordingly, we have not altered our recommendations in the final draft report.</p>
<p>7. State any alternative viewpoints concerning the issues presented in the report, if any, giving explicit reasons for your particular stance. A concern reflected in comments under different headings in this review is the paucity of information from field observations particularly on archaeological resources. Undue reliance cannot be placed on a survey, the 2002 survey, that is preliminary and at a reconnaissance level especially when its author emphasizes its incomplete nature. That issue needs to be addressed.</p>	<p>See points 3 and 4 above.</p>
<p>Minor corrections.</p>	<p>Have been corrected, with the exception of the provision of detailed maps with this report. SAHRA has been supplied with adequate maps and the inclusion of electronic maps would render the document too cumbersome for emailing purposes.</p>