

EXECUTIVE SUMMARY

1. INTRODUCTION

This Executive Summary incorporates the main findings of the Environmental Impact Assessment (EIA) that has been undertaken for the proposed N2 Wild Coast Toll Highway. The proposed project extends over a total distance of approximately 560 km between the N2 Gonubie Interchange (near East London in the Eastern Cape) and the N2 Isipingo Interchange (south of Durban in KwaZulu-Natal) (see Figure 1).

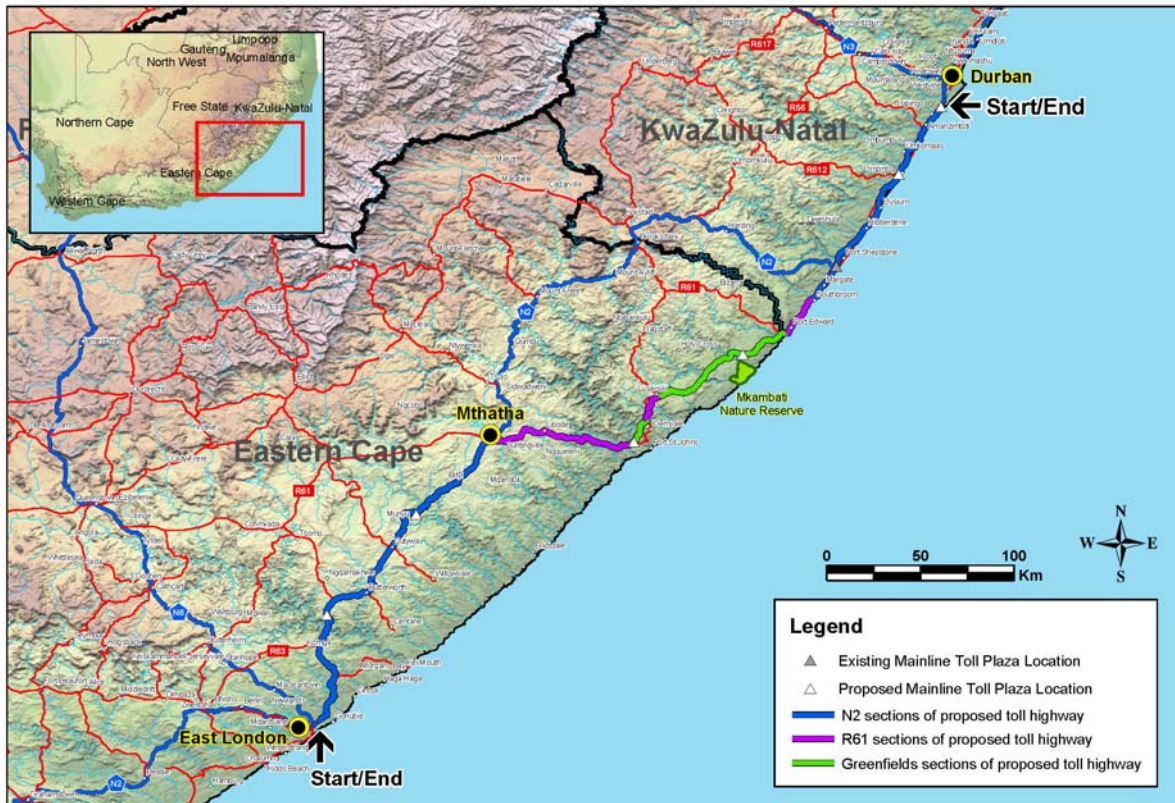


Figure 1: The proposed N2 Wild Coast Toll Highway route between the Gonubie Interchange (Eastern Cape) and the Isipingo Interchange (KwaZulu-Natal)

All comments received on the Draft Environmental Impact Report (EIR) have been collated in a Comments Report that is included as Volume 5 of the Final EIR. It should be noted that all significant changes to the Draft EIR are indicated in underlined text.

1.1 BACKGROUND TO THE STUDY

A previous EIA for the proposed N2 Wild Coast Toll Highway resulted in the issuing of an environmental Record of Decision (RoD), on 3 December 2003, which authorised the South African National Roads Agency Limited (SANRAL) to undertake the proposed project. However, numerous appeals were subsequently lodged with the Minister of Environmental Affairs and Tourism objecting to the authorisation granted to SANRAL. On 9 December 2004 the Minister upheld the appeals and set aside the authorisation on the grounds that the appointed environmental consultant did not meet the requirement for independence as contemplated in the EIA Regulations (Government Notice R1183 of 5 September 1997, as amended) promulgated under the Environment Conservation Act, 1989 (ECA, Act No. 73 of

1989). In addition to a number of other items, the Minister's decision also indicated that this did not preclude a new application for environmental authorisation from being submitted.

Following a proposal call by SANRAL in January 2005, SANRAL subsequently appointed CCA Environmental (Pty) Ltd (CCA), in association with NMA Effective Social Strategists (formerly Nomi Muthialu & Associates (Pty) Ltd; NMA), as independent environmental consultant to submit a new application for environmental authorisation and to undertake the required EIA of the proposed project as per the requirements of the ECA EIA Regulations.

1.2 OVERVIEW OF STUDY PROCESS

APPLICATION FOR AUTHORISATION AND PLAN OF STUDY FOR SCOPING

In April 2005 CCA submitted the required Application for Authorisation forms and a Plan of Study for Scoping, on behalf of SANRAL, to the Department of Environmental Affairs (DEA; the competent environmental authority – formerly the Department of Environmental Affairs and Tourism), the Eastern Cape Department of Economic Development and Environmental Affairs (formerly the Eastern Cape Department of Economic Affairs, Environment and Tourism) and the KwaZulu-Natal Department of Agriculture and Environmental Affairs. DEA, with due consideration of comments received from the relevant provincial environmental authorities, accepted the Plan of Study for Scoping on 20 June 2005.

SCOPING STUDY

A Scoping Study was undertaken in accordance with the requirements of the ECA EIA Regulations (Government Notice R1183 of 5 September 1997, as amended). The findings of the Scoping Study were presented in the Final Scoping Report (FSR), which was submitted to the relevant environmental authorities for consideration during March 2007.

The Scoping Study included a comprehensive audit of all the issues and concerns raised during the previous EIA's Scoping Study, Impact Assessment and Appeals phases in order to ensure that all relevant issues and concerns are adequately addressed in the current EIA. Existing information considered to be adequate and credible was used, as appropriate, in formulating the scope of the work and compiling the necessary documentation. The Scoping Study was undertaken with an initial round of public consultation aimed at providing Interested and Affected Parties (I&APs) an opportunity to comment on the proposed new EIA process only. The distribution of the Draft Scoping Report (DSR) and associated public consultation process (refer to Section 2.4 and Volume 2, Appendix 10 of the FSR) provided I&APs adequate opportunities to raise any issues and concerns on the proposed project and Scoping Study.

As mentioned in Chapter 7 of the FSR, numerous issues and concerns were raised by I&APs and identified by the EIA project team during the Scoping Study. These were categorised into 12 main categories, as follows:

- EIA process and legal issues;
- Public consultation process;
- Specialist studies;
- Planning and policy issues;
- Motivation/need for the project;
- Scope of work and construction issues;
- Road, traffic and transportation issues;
- Alternative routes;

- Tolling issues;
- Economic issues;
- Social issues; and
- Biophysical issues.

A number of issues and concerns were identified as “key” issues in the FSR since they were deemed to have significant implications in terms of consideration of the adequacy of the Scoping Study and/or way forward in the EIA process. The following key issues and concerns were identified:

1. Legality and adequacy of the EIA process;
2. Validity of the use of information from the previous EIA process;
3. Adequacy of the consideration of alternatives;
4. Adequacy of the consideration of alternative alignments;
5. Adequacy of the public consultation process;
6. Adequacy of the motivation/need for the proposed project;
7. Potential biophysical, social and economic impacts;
8. General support for the proposed project in the Eastern Cape and general opposition in KwaZulu-Natal;
9. Reliance on information provided by SANRAL;
10. Cross-subsidisation; and
11. Bypasses to Butterworth, Dutywa and Mthatha.

Section 7.6 and Appendix 14 (Comments and Responses Report) of the FSR provide the EIA project team’s and SANRAL’s responses to the above key issues and concerns, as appropriate.

Issues and concerns which were to be addressed in the Impact Assessment phase of the study are comprehensively described in Chapter 8 of the FSR. These relate to the potential biophysical, social and economic impacts which could result from the construction and operational phases of the proposed project. Some examples of the identified potential impacts are provided in the table below.

CATEGORY/ASPECT	EXAMPLE OF POTENTIAL IMPACT
BIOPHYSICAL IMPACTS	
Vegetation and flora	Loss of species of special concern and sensitive habitats; indirect and cumulative impacts; and consideration of the ecological sustainability of the proposed project.
Fauna	Loss of sensitive faunal habitats; increased animal mortalities; and impacts of bridges on breeding grounds of birds of prey.
Aquatic ecosystems	Potential impact on sensitive aquatic habitats; effects of changes in river channel structure and condition; and indirect impacts of improved accessibility of aquatic resources.
Soils, land use and agriculture	Loss of productive/potentially productive land; impacts on subsistence farming activities; and impacts in terms of likely improved regional access.
SOCIAL IMPACTS	
Social structures, functions and processes	Resettlement of affected households; social effects of potential improved local employment and regional economic development; and effects on the way of life of affected communities.
Tourism	Potential impact in terms of perceived increased cost to reach a destination; increase in growth and number of tourist products; and consideration of relevant local and regional tourism initiatives.
Cultural and historical heritage	Potential impact on historical heritage and cultural landscapes or views; impacts on burial grounds and graves; and impacts on sites of spiritual and religious importance.
Noise	Potential impacts associated with the construction phase; elevated noise levels of road traffic noise along the proposed route; and elevated noise levels along alternative routes.
Air quality	Potential impacts on local air quality and human health in sensitive areas; cumulative effects in South Durban Industrial Basin; and impacts on local air quality along alternative routes.
Visual	Potential impacts of the proposed road, high-level bridges, interchanges and toll plazas on the sense of place, especially in the greenfields sections; impacts on landscape character; and impacts in terms of critical views from the surrounding areas.
Traffic	Potential impacts of traffic diversion around toll plazas; impacts relating to the construction phase.
Planning/development	Potential impacts on regional strategic planning and development initiatives; impacts associated with the land claims process; and compatibility of the proposed project with relevant Wild Coast planning and policy initiatives.
ECONOMIC IMPACTS	
Economic impacts	Potential impact on businesses both along the route and in the region; net economic impact on road users; and impact on towns along the existing N2 and R61 that would be bypassed by the proposed new route.

The Scoping Study also included consideration of various alternatives, namely the “do nothing” alternative, alternative route alignments and alternative positions for certain proposed mainline toll plazas. The following alternative alignments were considered in the Scoping Study (see Figure 2):

- Upgrade the existing N2 between Mthatha and Port Shepstone in relation to the “do nothing” alternative;
- Upgrade the existing R61 between Mthatha and Port Shepstone in relation to the “do nothing” alternative;
- Gallagher route between Mthatha and Port Shepstone in relation to the “do nothing” alternative; and
- Various alternative greenfields alignments between Lusikisiki and the Mthamvuna River (e.g. the WESSA and Coastal Mzamba routes).

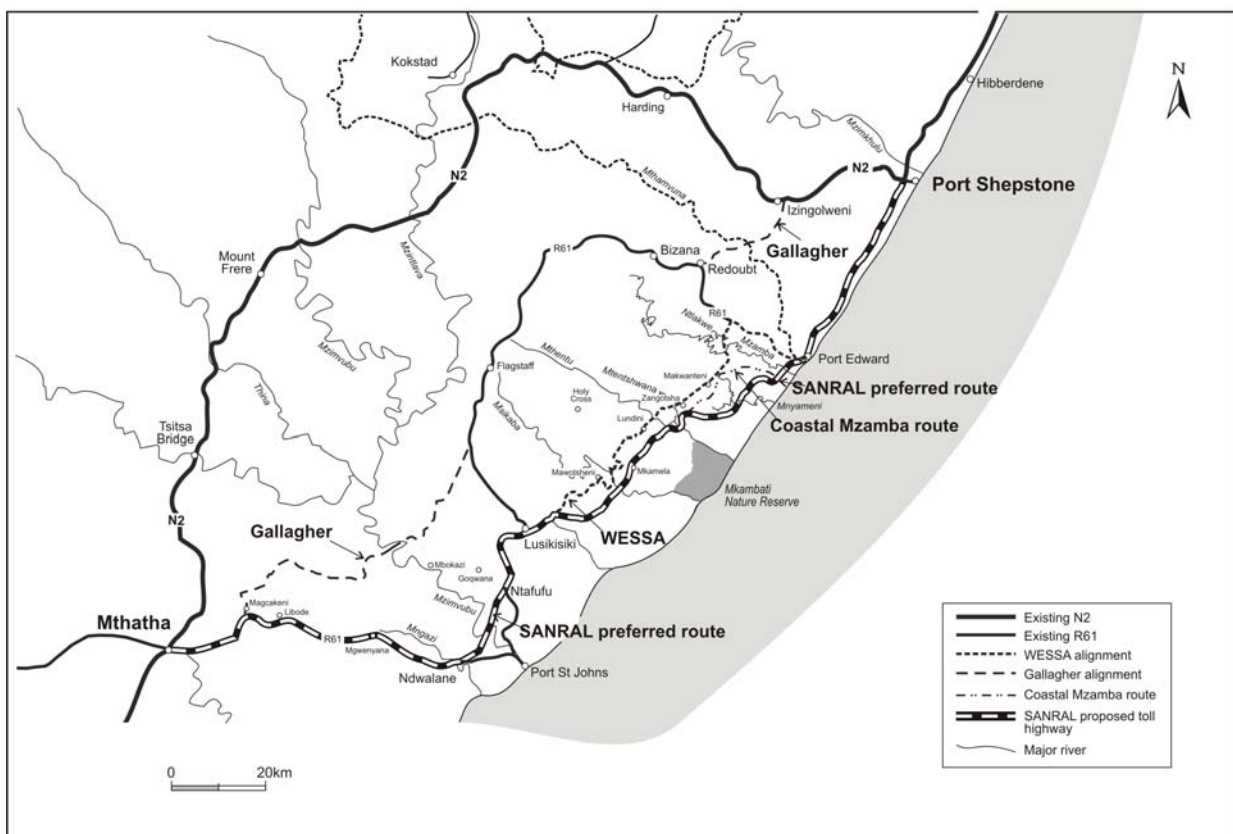


Figure 2: Some alternative route alignments between Mthatha-Port Shepstone and Lusikisiki-Mthamvuna River analysed in the Scoping Study

The FSR provided a comparative analysis of the environmental, technical financial and economic implications of the alternative route alignments, as appropriate, and indicated which ones would be carried forward for further investigation in the Impact Assessment phase of the EIA process (refer to Chapter 5 of the FSR for further detail in this regard). The following alternatives were considered “feasible” and were taken forward for further investigation and assessment in the Impact Assessment phase of the EIA:

- The “do nothing” alternative;
- SANRAL’s preferred alignment between Lusikisiki and the Mthamvuna River (see Figure 3);
- The Coastal Mzamba route between Lusikisiki and the Mthamvuna River (see Figures 3 and 4);

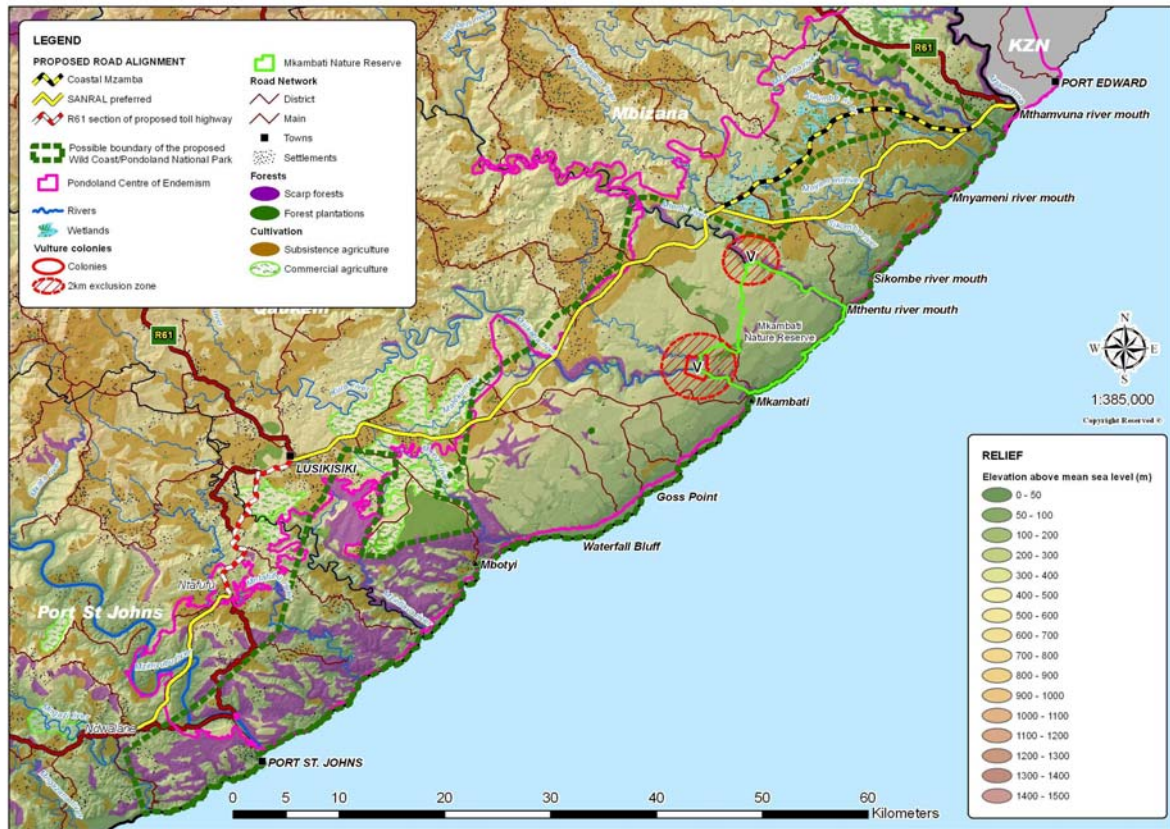


Figure 3: Topography and land use in the study area between Ndwalane/Port St Johns and the Mthamvuna River, with SANRAL’s preferred and the Coastal Mzamba routes through this section

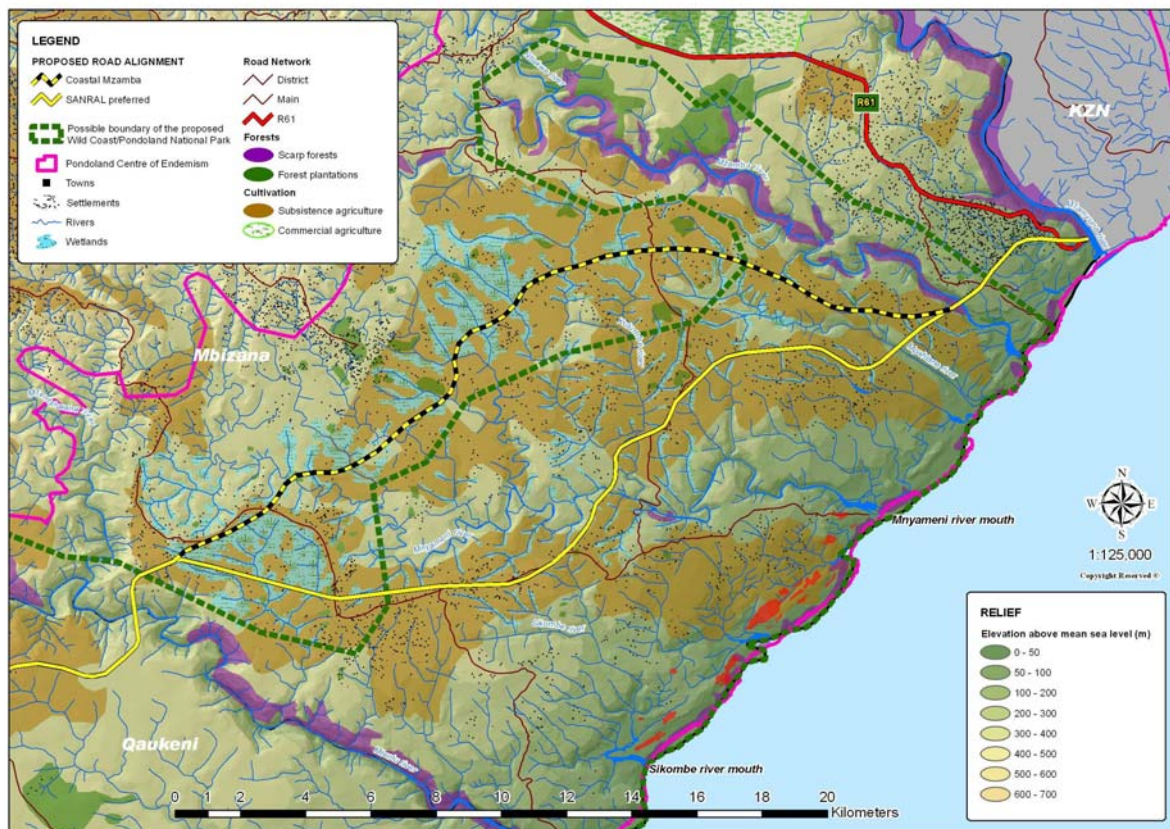


Figure 4: Receiving environment in the section between the Mthentu and the Mthamvuna rivers, with SANRAL’s preferred and Coastal Mzamba routes

- Alternative mainline toll plaza positions to SANRAL’s preferred Ndwalane and Mthentu mainline toll plazas; and
- The site-specific alternative route alignments in the greenfields sections of the proposed project, i.e. 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 (see Figure 5);
 - for the proposed alignment in the vicinity of Ntafufu village and the Ntafufu Rive (see Figure 6);
 - for the proposed alignment across the Msikaba River (see Figure 7);
 - for the proposed alignment across the Mthentu River (see Figure 8); and
 - for the proposed alignment across the Mnyameni River (see Figure 9).

The potential implications of the “do nothing” alternative were used mainly as a “base case” against which the potential impacts of the proposed project and the other identified feasible alternatives were measured.

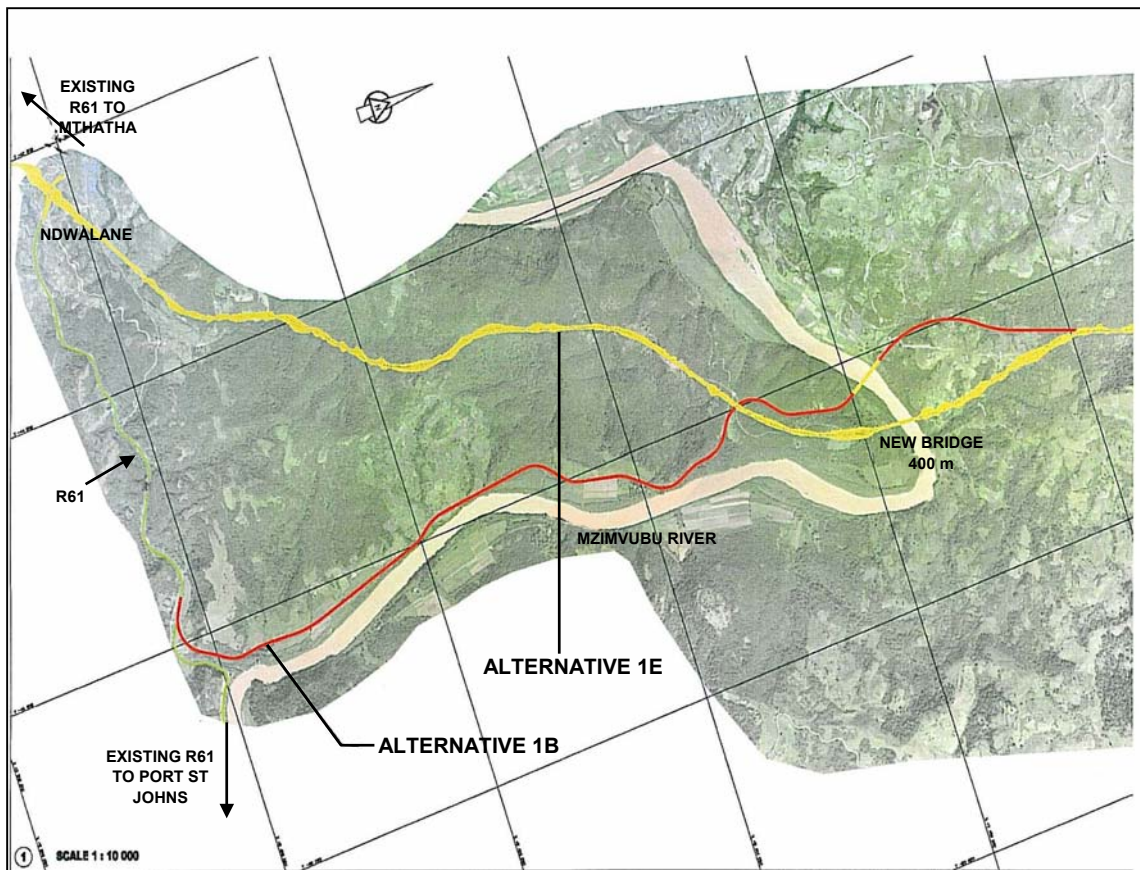


Figure 5: SANRAL preferred route (Alternative 1e) and the alternative alignment (Alternative 1b) between Ndwalane and the Mzimvubu River

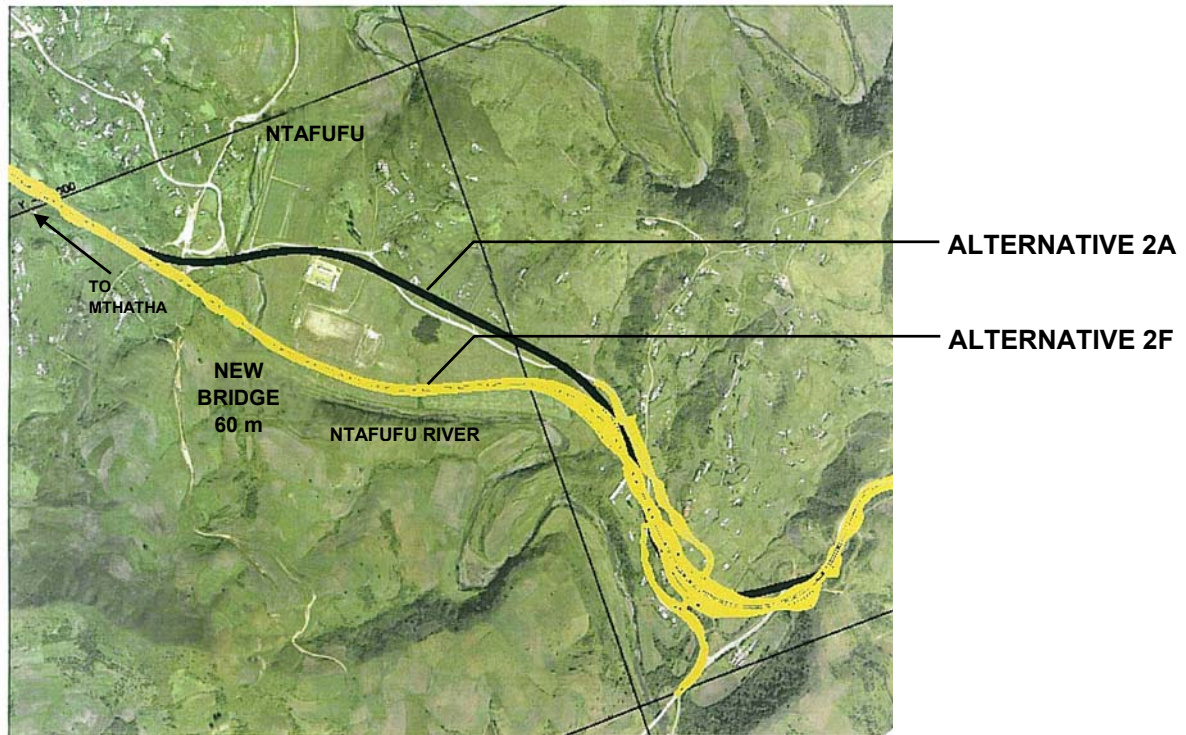


Figure 6: SANRAL preferred route (Alternative 2f) and the alternative alignment (Alternative 2a) in the vicinity of the Ntafufu village and Ntafufu River

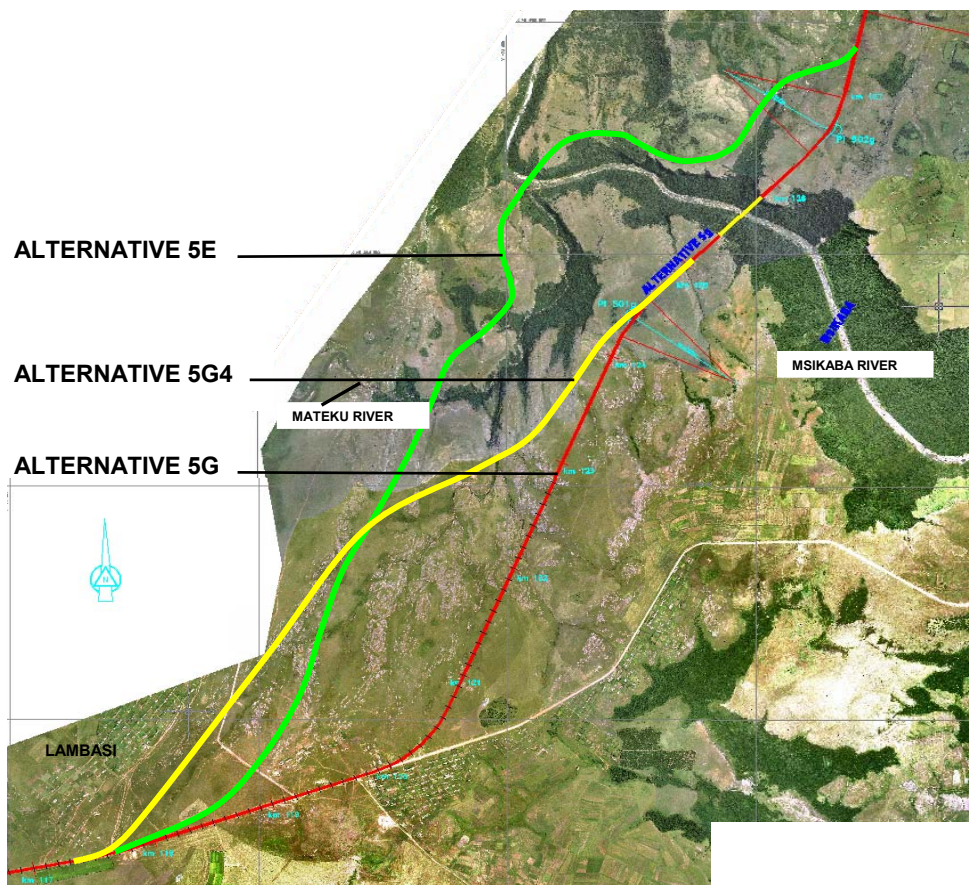


Figure 7: SANRAL preferred route (Alternative 5g4) and alternative alignments 5g and 5e across the Msikaba River

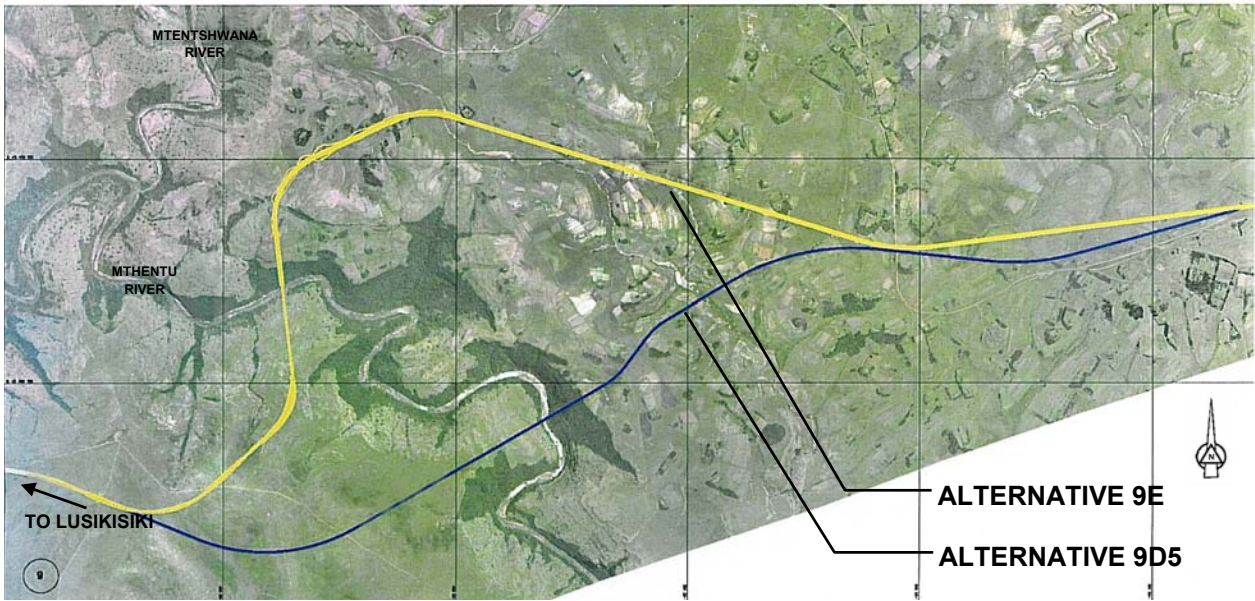


Figure 8: SANRAL preferred route (Alternative 9e) and the alternative alignment (Alternative 9d5) across the Mthentu River

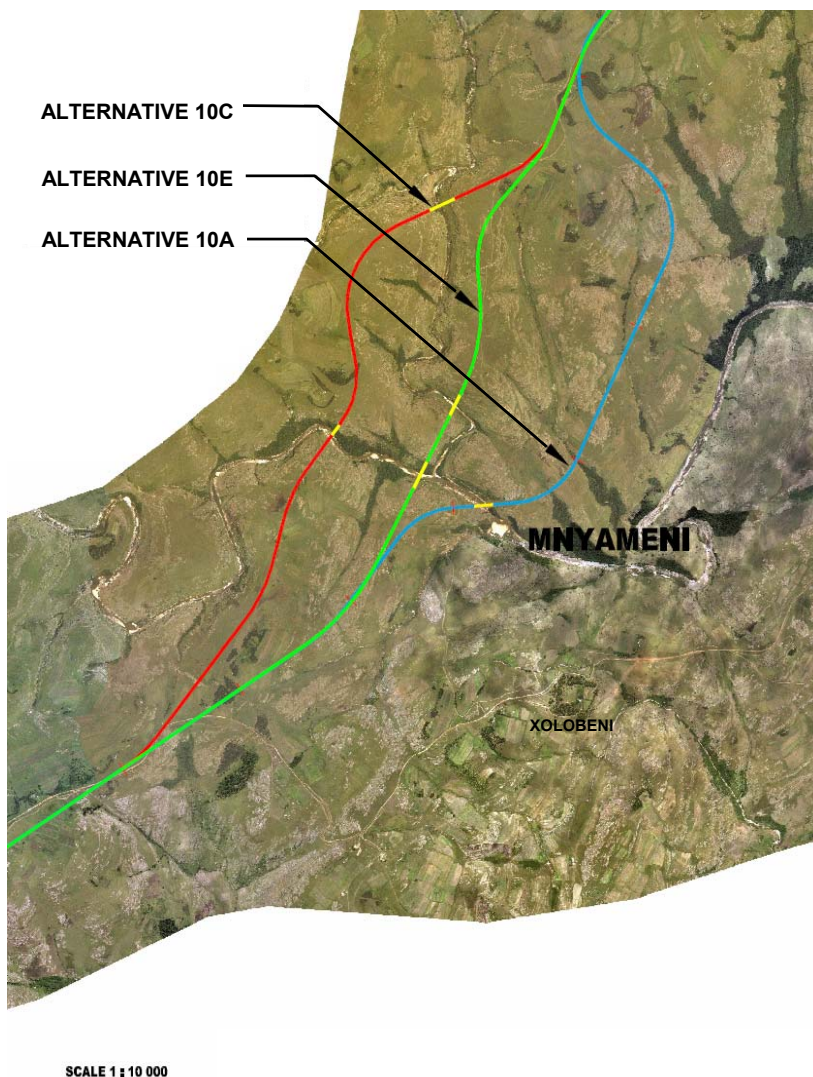


Figure 9: SANRAL preferred route (Alternative 10c) and alternative alignments 10a and 10e across the Mnyameni River

PLAN OF STUDY FOR EIA

A Plan of Study for EIA was submitted to the relevant environmental authorities in April 2007. The Plan of Study for EIA provided, amongst others, a description of the environmental issues identified during the Scoping Study, the identified feasible alternatives to be investigated and assessed in the Impact Assessment phase and the method of identifying and determining potential impacts. DEA accepted the FSR and Plan of Study for EIA during May 2007 and requested that SANRAL submit an EIR which should comply with the requirements of Regulation 8 of the ECA EIA Regulations.

SPECIALIST STUDIES

Suitable, independent specialists were thus duly commissioned, between May and July 2007, to undertake 13 specialist studies on potential impacts associated with the construction and operation of the proposed project, as per the Terms of Reference formulated in Chapter 9 of the FSR. Specialist studies were undertaken in the following fields: vegetation and flora; fauna; aquatic ecosystems; soils, land use and agriculture; social; tourism; cultural and historical heritage; noise; air quality; visual; traffic; planning/development; and economic.

The specialist reports compiled as part of the previous EIA were considered to reflect independent specialist studies suitable for use in the current EIA except the Eastern Cape planning study, the visual study and the traffic study. The latter studies needed to be re-done afresh. The specialist studies were generally aimed at:

- Reviewing the 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 (e.g. inclusion of the alternative Mthentu toll plaza location);
- Ensuring that all relevant issues/potential impacts and key shortcomings and/or gaps are adequately addressed; and
- Including the results of new investigations (e.g. assessment of the potential impacts of the Coastal Mzamba alternative alignment).

Draft specialist reports were subjected to external peer specialist review, which informed the compilation of the final draft specialist reports.

COMPILATION OF FINAL EIR

The key findings of the specialist studies undertaken to assess the potential biophysical, social and economic impacts of the proposed project and the alternatives brought forward for further investigation were presented in a Draft EIR. The report integrated and synthesised the results of the specialist studies and other relevant, available information and provided an overall assessment of the potential impacts of the proposed project and the identified feasible alternatives. The findings of a comparative assessment of alternative route alignments and toll plaza locations were presented and recommendations were made in terms of mitigation, enhancement and management measures that would be applicable to the further planning, design, construction and operation of the proposed project (if authorised).

Section 2.2.2(c) of the Final EIR provide detailed descriptions of the distribution of the Draft EIR and the associated public consultation process. A basic analysis of the comments received during the Draft EIR comment period (10 November 2008 to 22 January 2009) reveals the following (see Volume 1, Appendix E for details):

- A total of 7 876 written submissions were received;
- A large number of submissions (36.2 %) are duplicates of standard objection forms;

- The majority (97.6 %) of original KwaZulu-Natal submissions raised issues related to tolling - i.e. the potential negative impacts on business, commuters, air quality, safety on alternative routes, etc. These submissions highlight the overwhelming resistance to the proposed tolling of the existing N2 on the Upper South Coast;
- On the contrary, only 8.5 % of the Eastern Cape submissions raised tolling-related issues. The Eastern Cape submissions show strong support for the proposed project and the potential employment opportunities that would arise during construction, particularly in the greenfields sections, while concerns were raised about access across the proposed toll highway for people and cattle, fencing and its maintenance, and issues of relocation and compensation;
- The most commonly raised issues (original submissions) in the KwaZulu-Natal submissions related to opposition to tolling on the Upper South Coast (86.7 %), affordability of tolling for the poor (39.2 %), the potential impact on commuters working in the South Durban Basin (27.1 %) and perceived cross-subsidisation whereby I&APs on the Upper South Coast feel they would be paying for the construction of the proposed new road in the Eastern Cape (18.1 %); and
- The two main issues raised in the Eastern Cape submissions were that the proposed project should go ahead (77.1 %) and that local people should be given job opportunities during construction (47.1%).

The Final EIR has been compiled with due consideration of comments received during the Draft EIR comment period and responses provided by the EIA project team, relevant specialists and SANRAL, as appropriate, and additional input received from the aquatic ecosystems, social and planning/development specialists.

1.3 AVAILABILITY OF THE FINAL EIR

Copies of the full report will be lodged in the following public libraries/venues for I&AP information purposes:

Eastern Cape

East London Central Library	Tabankulu Library
Gonubie Library	Port St Johns Library
Komga Library	Lusikisiki Information Centre
Butterworth Public Library	Ingquza Hill Municipal Offices (Lusikisiki)
Dutywa Public Library	Flagstaff Information Centre
Mthatha Public Library	Ingquza Hill Municipal Offices (Flagstaff)
Mhlonto Municipal Offices (Qumbu)	Bizana Library
Umzimvubu Municipal Offices (Mount Ayliff)	Matatiele Library
Nyandeni Municipal Offices (Libode)	

KwaZulu-Natal

Kokstad Public Library	Cragieburn Library
Harding Public Library	Scottburgh Memorial Library
Ezingolweni Municipal Offices (Izingolweni)	Park Rynie Library
Durban Central Reference Library	Umzinto Library
Isipingo Civic Library	Pennington Library
Isipingo Beach Library	Hibberdene Library
Athlone Park Public Library	Umtentweni Library
Amanzimtoti Library	Port Shepstone Library
Kwamakhuta Library	Uvongo Library
Kingsburgh Library	Margate Library
Umkomaas Library	Southbroom Library
Adams Mission Library	Port Edward Library

The full report will also be made available on the websites www.ccaenvironmental.co.za and www.nra.co.za.

2. PROPOSED PROJECT

2.1 MOTIVATION FOR THE PROPOSED PROJECT

NATIONAL AND REGIONAL ECONOMIC CONTEXT

National road networks link together the main cities and economic regions of a country and thus play an important developmental role in economic growth and social upliftment. National road networks are primarily designed to facilitate the safe and efficient movement of people, goods and services over medium to long distances between economic centres. Trips are undertaken by private vehicles (commuter, business and recreational trips), public transport and commercial heavy vehicles to satisfy the needs and requirements of the unitary economic unit, i.e. the household, in a particular corridor, adjacent regions and the rest of the country. At a regional level, the provincial and local road networks provide the necessary linkages to the local communities thereby providing, with the national network, the required mobility to provide the basic ingredients for socio-economic growth.

The former Transkei, particularly the region between the Kei River and the Mthamvuna River is doubly handicapped in this respect. Not only does it currently have few economically realisable natural resources but the rugged and mountainous terrain has ensured that access is barely adequate at best and rudimentary at worst. The alignment of the existing N2, for instance, was determined in 1936 (the actual road was substantially completed by 1946) and has remained the only primary access to the area to date. The paved R61, which is the only other primary access, was only completed in the late 1970's and early to middle 1980's. There has been no improvement in provision of access since then. Secondary and local road networks are inadequate, at best, where they exist or are non-existent.

The existing N2 and R61 tend to follow "watershed alignments" in order to avoid crossing deeply incised gorges and river valleys on the scale and extent of the "Valley of a Thousand Hills" and the Oribi Gorge in KwaZulu-Natal. Hence, the existing N2 is located up to more than 100 km inland (at Mount Frere) and reaches a height of approximately 1 700 metres above mean sea level at Brookes Nek before it descends to sea level at Port Shepstone. The R61, in turn, is located up to almost 60 km inland (at Flagstaff) and is at a height of about 1 000 m at that point. Access to the coast is poor where it exists at all. Access parallel to the coast is non-existent because of the deeply incised gorges and valleys. For example, in many cases it is only possible to drive between certain locations along the coast by first returning to the R61. This can involve a round trip of about 100 to 120 km, whereas the locations are often only 20 to 30 km apart. Not surprisingly, this region is one of the most impoverished areas in South Africa. The proposed project aims to improve access and linkage to the Wild Coast region while reducing road-user costs and optimising safety and socio-economic benefits.

The Wild Coast region has been identified as an area for strategic economic development in accordance with Government's Spatial Development Initiative (SDI) strategy. The Wild Coast SDI identified the provision of a major road, such as the proposed toll road, as an important catalyst for achievement of its objectives since it would enhance access to the region and would facilitate development of the eco-tourism potential of the area.

The existing N2 south of Mthatha requires major upgrades to fulfil its function as a primary national road between economic centres and to cater for rapidly growing traffic volumes. The existing R61 and N2 between Port Edward and Durban are currently in a good to fair condition. The section between the Adams Road and Isipingo interchanges is currently operating at or beyond its maximum Level of Service D capacity. Traffic growth in the medium- to long term is likely to induce unstable flow and thus severe congestion (stop-start conditions).

The proposed N2 Wild Coast Toll Highway aims to provide an improved, shorter and safer road link between the Eastern Cape/Western Cape and KwaZulu-Natal. A shorter, more efficient transport route is viewed as an improvement to the national road network and is considered of strategic importance to the region and the country as a whole. It is considered that such a national road or “spine” would provide the necessary linkages and impetus to improve the secondary and local networks while facilitating sustainable economic growth along the entire corridor.

SUMMARY OF KEY ROAD PROBLEMS ALONG THE EXISTING N2 AND R61 SECTIONS OF THE PROPOSED N2 WILD COAST TOLL HIGHWAY AND POTENTIAL BENEFITS TO THE ROAD USER

The key road problems currently experienced along the existing N2 and R61 sections of the proposed toll highway and the potential benefits of the proposed project to the road user are provided in Table 1.

Table 1: Current road problems along the existing N2 and R61 sections of the proposed toll highway and potential benefits of the proposed project to the road user

ROAD SECTIONS AND CURRENT PROBLEMS	POTENTIAL BENEFITS TO THE ROAD USER
GONUBIE INTERCHANGE TO NGOBOZI (77.9 km; existing N2)	
<ul style="list-style-type: none"> • Extensive deterioration of the pavement (rutting and cracking) on certain sections. • Some capacity problems at steep inclines. • Extensive pot-hole/patching repairs on certain sections. • Few climbing/passing lanes. 	<ul style="list-style-type: none"> • Improved riding quality. • Improved road user safety. • Reduced Vehicle Operating Cost (VOC).
NGOBOZI TO DUTYWA (52.6 km; existing N2)	
<ul style="list-style-type: none"> • Pedestrian and livestock traffic pose a safety risk in some areas due to proximity of rural settlements. • Conditions at Ndabakazi Intersection are very dangerous due to turning traffic and pedestrians. • Road markings very indistinct on the main street through Butterworth. • Large numbers of vehicles executing turns at intersections in Butterworth. • Large numbers of pedestrians in Butterworth. • Riding quality fair to poor. • Fencing and signage poor. 	<ul style="list-style-type: none"> • Improved capacity. • Improved riding quality. • Improved road user safety. • Reduced VOC. • Reduced travel time. • Improved safety for communities, pedestrians and other road users.
DUTYWA TO MTHATHA (84.7 km; existing N2)	
<ul style="list-style-type: none"> • Riding quality fair to very poor. • Road surface is extensively deformed with frequent potholes/patching repairs in some areas. • Many illegal accesses. • Surface is extensively deformed with widespread cracking over entire length and width between Viedgesville and Mthatha. • Large numbers of vehicles executing turning movements at intersections through Mthatha. • Large numbers of pedestrians in Mthatha. 	<ul style="list-style-type: none"> • Improved capacity. • Improved riding quality. • Improved road user safety. • Reduced VOC. • Reduced travel time. • Improved safety of communities, pedestrians and road users.

ROAD SECTIONS AND CURRENT PROBLEMS	POTENTIAL BENEFITS TO THE ROAD USER
MTHATHA TO NDWALANE (79.5 km; existing R61)	
<ul style="list-style-type: none"> • Section of the route near Mthatha characterised by peri-urban development along the road corridor, which requires the formalisation of access and cross-access. • Road in very poor condition in some sections. • The route passes through an area of geotechnical instability in the mountain pass (Tutor Ndamase Pass). • Culvert failure near Ndwalane in 2001. 	<ul style="list-style-type: none"> • Improved road user safety. • Improved and controlled access. • Increased traffic capacity. • Improved riding quality. • Reduced VOC. • Reduced travel time.
NDWALANE TO NTAUFUFU RIVER (16.5 km; new road section)	
<ul style="list-style-type: none"> • Existing design speed is 40-50 km/h. 	<ul style="list-style-type: none"> • Much reduced travel time since the proposed new route would be 12 km shorter than the existing pass between Ndwalane and Ntafufu. The alignment and design speed (100-120 km/h) of the proposed new route would also be far superior to the existing pass. • Reduced VOC. • Improved road user safety.
NTAFUFU RIVER TO LUSIKISIKI (18 km; existing R61)	
<ul style="list-style-type: none"> • Design speed of existing road 40 km/h over certain sections to minimise initial construction costs. • Pavement deterioration evident. • Patches and cracks. 	<ul style="list-style-type: none"> • Reduced VOC. • Reduced travel time. • Improved road user safety.
LUSIKISIKI TO MTHAMVUNA RIVER (80 km; new road section)	
<ul style="list-style-type: none"> • No access or road link exists. 	<ul style="list-style-type: none"> • Much reduced travel time associated with approximately 80 km shorter route. • Reduced VOC. • Improved road user safety. • Provide access across major river gorges where none currently exists.
MTHAMVUNA RIVER TO ISPINGO INTERCHANGE (147.5 km; existing R61 and N2)	
<ul style="list-style-type: none"> • Mthamvuna River to Southbroom section is characterised by frequent access points, which currently serve a number of coastal resorts and the more rural areas of KwaZulu-Natal. • Sub-standard interchange at Adams Road. • Capacity problems during peak periods between Adams Road and Isipingo interchanges. 	<ul style="list-style-type: none"> • Improved road user safety. • Improved access control. • Reduced VOC. • Reduced travel time. • Improved riding quality. • Alleviation of traffic congestion. • Safer access at Adams Road Interchange.

2.2 BROAD DESCRIPTION OF PROPOSED PROJECT

It is proposed that the design, construction, financing, operation and maintenance of the proposed highway be undertaken as part of a 30-year Concession Contract. A detailed description of the proposed construction activities that would be undertaken in the various road sections during the Initial Construction Period (normally the first three years) of the concession is provided in Section 4.2 of the Final EIR.

The key components of the proposed project include:

- Upgrading and widening of existing road sections (of the N2 and R61) included within the proposed project (approximately 470 km);
- New road construction within two greenfields sections (approximately 90 km);
- Construction of nine new bridges;

- Upgrading and/or construction of new road interchanges and intersections; and
- Construction of associated structures (such as toll plazas, pedestrian overpasses and animal underpasses).

According to SANRAL, 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, through the following:

- Upgrading and/or construction of the route to an appropriate design speed (90 to 120 km/h) for the majority of its length, while maintaining a minimum of 60 km/h design speeds in short sections such as mountain passes (e.g. the Kei Cuttings);
- Construction of a two-lane single carriageway with wide shoulders, while dual carriageways and/or climbing lanes would be constructed where warranted by traffic volumes and safety requirements;
- Construction and maintenance of appropriate safety devices such as fencing and vehicular / pedestrian / livestock over- or underpasses and walkways while maintaining an attractive road reserve along the length of the route;
- Consolidation and formalisation of accesses onto the proposed toll highway in order to ensure road user safety (in terms of sight distances and provision of traffic turning lanes);
- Rehabilitation and overall improvement of the road surface along existing sections of the route;
- Installation and maintenance of road signage, road furniture and roadside emergency facilities; and
- Provision of a well-maintained road reserve along the length of the proposed route.

The proposed route alignment (refer to Figure 1) would connect various economic centres, including East London, Butterworth, Mthatha, Lusikisiki, Port Edward, Port Shepstone and Durban, and would be approximately 75 km 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, as follows:

- Existing N2 between the Gonubie Interchange and Mthatha;
- Existing R61 between Mthatha and Ndwalane;
- Existing R61 between Ntafufu River and Lusikisiki; and
- Existing R61 and N2 between the Mthamvuna River and the Isipingo Interchange.

New road construction is proposed between Ndwalane and Ntafufu, and between Lusikisiki and the Mthamvuna River (“greenfields” sections). Within the new road sections, bridge crossings are required at the Mzimvubu, Ntafufu, Msikaba, Kwadlambu, Mthentu, Mnyameni, Kulumbe, Mpahlane and Mzamba rivers.

The following grade separation interchanges are proposed:

- Komga Interchange;
- Ndabakazi Interchange;
- Elliotdale Interchange;
- Viedgesville Interchange;
- Ndwalane Interchange;
- Ntafufu Interchange;
- Lusikisiki Interchange;
- R61 (Mthamvuna) Interchange;
- Port Edward Interchange;
- Southbroom Interchange; and
- Adams Road Interchange.

District road intersections would be upgraded along the entire route in order to provide turning slots and improve safety. Village and informal accesses would be closed and feeder roads constructed to provide access at new, safe and appropriate access points, with a minimum spacing of approximately 1 km between these accesses. Fencing, cattle grids, underpasses, overpasses, sidewalks and frontage roads would be constructed, where required, in order to improve safety and provide grade separation accesses across the route. Public transport lay-byes would be provided where required and where it would be safe and possible to do so. It is anticipated that such lay-byes would be provided at least at the existing major intersections. SANRAL has indicated that the exact location and number of underpasses, overpasses and public transport stopping points would be finalised in consultation with directly affected communities during the detailed design phase.

According to SANRAL, the Concessionaire would be required to provide a high standard of traffic accommodation during the construction phase. It is anticipated that the toll plazas would be built towards the end of completion of the proposed road upgrading/construction.

2.3 TOLL STRATEGY AND TOLL SECTIONS

The toll strategy and location of the plazas would be such that, as equitably as possible, the motorist would pay only for the extent of the road that is used. Consequently each plaza would have a unique toll applicable to each individual class of vehicle. The applicable toll tariffs would be within the norms currently utilised in South Africa.

The proposed N2 Wild Coast Toll Highway would include seven mainline toll plazas (four mainline plazas in the Eastern Cape and three in KwaZulu-Natal) and 24 ramp/interchange toll plazas (i.e. 12 sets of ramp plazas), of which one mainline and four sets of ramp toll plazas already exist on the N2 South Coast Toll Road (see Section 4.2 of the Final EIR). Mainline toll plazas are proposed as follows:

- To the north-east of the Kei River cuttings, just outside Ngobozi – the Ngobozi Toll Plaza;
- In the Bashee Bridge region, close to the Candu River – the Candu Toll Plaza;
- In the vicinity of Ndwalane – the Ndwalane Toll Plaza;
- Immediately north of the Mthentu River – the Mthentu Toll Plaza;
- The existing Oribi Plaza between Izotsha and Umtentweni;
- Just north of the Park Rynie Interchange – the Park Rynie Toll Plaza; and
- Just south of the Isipingo Interchange – the Isipingo Toll Plaza.

Ramp toll plazas are proposed as follows:

- Proposed Ndwalane Interchange (southern ramps);
- Shelly Beach Interchange (existing Izotsha ramp plazas);
- Marburg Interchange (existing Oribi northern and southern ramp plazas);
- Umtentweni Interchange (existing Umtentweni ramp plazas);
- Pennington Interchange (southern ramps);
- Park Rynie Interchange (southern ramps);
- Scottburgh Interchange (northern ramps);
- Umkomaas Interchange (northern ramps);
- Adams Road Interchange (southern ramps);
- Moss Kolnick Interchange (southern ramps); and
- Joyner Road Interchange (southern ramps).

Table 2 shows the proposed toll sections, the preferred mainline toll plazas, the possible lengths of the toll sections of the proposed project and a range of possible toll tariffs.

Table 2: Toll sections, associated mainline toll plazas and possible range of toll tariffs

PROPOSED TOLL SECTION	ASSOCIATED MAINLINE TOLL PLAZA	LENGTH OF PROPOSED TOLL SECTION	POSSIBLE RANGE OF TOLL TARIFFS (R) (2006 prices; Class 1 vehicle)		
			Low	High	Mid
East London to Butterworth	Ngobozi	97.8 km	17	46	28
Butterworth to Mthatha	Candu	120.8 km	21	57	35
Mthatha to Ntafufu	Ndwalane	92.3 km	16	43	27
Ntafufu to Southbroom	Mthentu	121.1 km	41	114	70
Southbroom to Hibberdene	Existing Oribi	50.1 km	9	24	15
Hibberdene to Winklespruit	Park Rynie	60.7 km	10	29	18
Winklespruit to Isipingo	Isipingo	16.2 km	3	8	5

NOTE: The possible ranges of toll tariffs given above are based on typical tariffs on existing similar toll roads in South Africa and as such are highly speculative. Tariffs are usually based on the length of toll road that is used. These tariffs also do NOT include regional or local discounts or frequent user discounts. It should be further noted that the possible toll tariff ranges provide some indication only as to what the potential toll tariffs at the various mainline toll plazas could be and are based on 2006 prices. Ramp toll tariffs are determined on a comparable basis. The actual toll tariffs when the toll highway is put into operation are subject to a competitive tender process and the Notice of Intent for Declaration of a Toll Road process, including the negotiation and determining of discounts before it can finally be approved and promulgated by the Minister of Transport.

3. THE AFFECTED ENVIRONMENT

The proposed N2 Wild Coast Toll Highway Project would be located in the eastern part of South Africa, and would traverse sections of both the Eastern Cape and KwaZulu-Natal provinces. The region is predominantly a summer rainfall area with most rains occurring in the spring and summer months (October to March). There is a gradation in climatic regime across the study area, with the northern part of the Eastern Cape experiencing cool sub-tropical conditions, while KwaZulu-Natal is classified as warm sub-tropical.

The general topography of the route is characterised by undulating to rolling terrain with deeply incised river valleys, particularly within the greenfields section between Lusikisiki and the Mthamvuna River (refer to Figure 3). The area inland of the coastal plateau is characterised by extremely broken and rugged mountainous terrain with widely eroded river basins. The terrain generally rises steeply inland (800 m at Holy Cross, 1 000 m at Flagstaff) to culminate in the 3 000 m high Drakensberg range some 200 km inland.

The proposed project would cross numerous drainage lines and rivers, ranging from low to very high importance. Estuaries along the Wild Coast have been identified nationally as having high botanical importance, include the Mngazana and Mbashe. Estuaries north of Port Edward, although more disturbed by development, are also reservoirs of biodiversity and play an important role in the ecosystem. No major wetland systems would be crossed by the proposed road alignment. In general, the wetlands along the route are small, occurring in the form of palustrine seepage slope systems due to the topography and geology of the region. A variety of Red Data Book fish species occur in the aquatic systems along the entire route.

The study area includes a variety of grassland, thicket and forest vegetation types. The greenfields section between Lusikisiki and Port Edward would bisect the Pondoland Centre of Endemism (PCE) and

would pass through sections of the proposed Wild Coast/Pondoland National Park. The PCE has been recognised by Conservation International, the IUCN and World Wildlife Foundation as one of 235 botanical global hotspots of plant diversity. A call for its protection has also come from the Strategic Assessment of Biodiversity in the Eastern Cape. The Pondoland Biosphere Reserve would extend from the north banks of the Mzimvubu River at Port St Johns to the south bank of the Mthamvuna River near Port Edward, an overall distance of about 80 km.

Faunal knowledge of the former Transkei region, specifically the proposed greenfields corridor, remains poor. Available information does indicate that within protected areas there is high faunal biodiversity and numerous endemic species. Outside of these areas, the fauna of this region is, in general, considered to be impoverished due to large-scale overgrazing and other human-induced impacts. The birds of the region are relatively well studied.

The Eastern Cape is one of the poorer provinces in South Africa, with a consistently higher unemployment rate than the national average and a relatively large rural population. It includes the former Eastern Province, Border, north-eastern Cape areas and the former “homelands” of Transkei and Ciskei. Major communities along the proposed toll highway include commercial farming communities, small rural towns (e.g. Dutywa), larger secondary and regional towns (e.g. Mthatha), “subsistence” rural villages and scattered communities typical of the Eastern Cape. Some of these communities are among the poorest in South Africa.

Tourism is an important economic activity in the two regions through which the proposed toll highway would pass. The Eastern Cape is the fifth most popular province visited by foreign tourists, whilst KwaZulu-Natal is the third, after Gauteng and the Western Cape. In the category of domestic overnight trips, KwaZulu-Natal is placed second behind Gauteng, while the Eastern Cape is placed third.

The planning, legal and policy context of the proposed project is provided at a number of levels, i.e. national, provincial, district, metropolitan and local. Various pieces of national legislation would be applicable to the proposed project. These include a number of permit requirements that would apply to specific aspects of the proposed project, such as development of borrow pits or quarries and potential water use activities. In terms of biodiversity conservation in the Eastern Cape, a number of strategic documents have recently been compiled under the Wild Coast Conservation and Sustainable Development Programme including, amongst others, a Conservation Assessment, Biodiversity Strategy and Action Plan and Strategic Environmental Assessment.

4. CONCLUSIONS: ASSESSMENT OF POTENTIAL IMPACTS

4.1 ASSESSMENT OF ROAD SECTIONS

The key potential negative and positive impacts that would result from the proposed works along the various road sections after implementation of the recommended mitigation and enhancement measures (residual negative and positive impacts) are given in Table 3. It can be inferred from Table 3 that the most significant negative impacts would be associated with the proposed new road in the greenfields sections of the proposed toll highway. The most significant residual negative and positive impacts assessed along the various road sections are listed below:

Most significant residual negative impacts along the various road sections

- Social impacts associated with reduction of access points onto the proposed toll highway between Ngobozi and Mthatha;

- Faunal impacts associated with loss of sensitive habitats during construction between Ndwalane and the Ntafufu River, and between Lusikisiki and the Mthamvuna River;
- Impacts on estuaries associated with improved access between Ndwalane and the Mthamvuna River; and
- Noise impacts associated with operation of the proposed toll highway between Ndwalane and the Ntafufu River, and between Lusikisiki and the Mthamvuna River.

Most significant residual positive impacts along the various road sections

- Social impacts associated with increased employment opportunities;
- Social impacts associated with improved livestock safety between the Gonubie Interchange and Lusikisiki;
- Tourism impacts associated with an increase in the number of tourism products between the Gonubie Interchange and the Mthamvuna River; and
- Social impacts associated with improved safety for vehicle road users between Ngobozi and the Mthamvuna River.

4.1.1 COMPARATIVE ASSESSMENT OF ALTERNATIVE ALIGNMENTS

COMPARATIVE ASSESSMENT OF ALTERNATIVE 1B VERSUS THE SANRAL PREFERRED ROUTE BETWEEN NDWALANE AND THE MZIMVUBU RIVER (refer to Figure 5)

Alternative 1b would present major advantages over the SANRAL preferred route in terms of limiting potential impacts on sensitive faunal habitats and potential noise impacts to nearest residences. However, this route would result in residual impacts of HIGH significance on prime riparian irrigation land and riparian ecosystems at the crossing of the Mzimvubu River. Also, it is anticipated that both routes would result in residual indirect impacts of **HIGH** significance due to increased recreational and development-related pressures which would be exerted on sensitive estuaries in the region due to improved access. Thus, consideration of the overall environmental implications of the two site-specific alternative routes does not reveal a clearly favoured route option. SANRAL has indicated that the construction of a major road in the floodplain of a river would not be preferable from a practical, strategic and technical perspective since the road would have to be raised to clear the 1:100 year floodline.

COMPARATIVE ASSESSMENT OF ALTERNATIVE 2A VERSUS THE SANRAL PREFERRED ROUTE IN THE VICINITY OF NTAFUFU VILLAGE AND THE NTAFUFU RIVER (refer to Figure 6)

The key factor to be considered in determining a preferred route in the Ntafufu area would be the potential impacts on the two local Ntafufu schools, providing that adequate compensation/replacement of the affected irrigation scheme and school playing fields adjacent to the river occurs. In this regard, the SANRAL preferred route (Alternative 2f) is considered more favourable, due solely to the additional threat Alternative 2a would pose to the Ntafufu Senior Secondary School.

Table 3: Key potential residual impacts that would result from the proposed works along the various road sections

ROAD SECTIONS	KEY RESIDUAL NEGATIVE IMPACTS	KEY RESIDUAL POSITIVE IMPACTS
GONUBIE INTERCHANGE TO NGOBOZI	<p>It is anticipated that the proposed works along this road section would result in key residual negative impacts of MEDIUM significance in relation to the following:</p> <ul style="list-style-type: none"> • Impacts associated with water quality changes in estuaries during the operational phase; • Impacts associated with graves; and • Visual impacts associated with the proposed Ngobozi mainline toll plaza. 	<p>The following key residual positive impacts of POSITIVE HIGH significance are anticipated:</p> <ul style="list-style-type: none"> • Social impacts associated with increased employment opportunities during the construction phase; • Social impacts associated with improved livestock safety; and • Tourism impacts associated with an increase in the number of tourism products. <p>Key residual positive impacts of POSITIVE MEDIUM or POSITIVE MEDIUM-HIGH significance are anticipated in relation to the following:</p> <ul style="list-style-type: none"> • Social impacts associated with increased employment opportunities during the operational phase; • Social impacts associated with improved safety for vehicle road users; • Tourism impacts associated with an increase in growth in transit tourists on a KZN/Eastern Cape/Western Cape route; • Planning/development impacts associated with the nodal point at Mooiplaas; and • Planning/development impacts associated with the proposed Komga Interchange.

ROAD SECTIONS	KEY RESIDUAL NEGATIVE IMPACTS	KEY RESIDUAL POSITIVE IMPACTS
NGOBOZI TO MTHATHA (NGQELENI)	<p>It is anticipated that the proposed works along this road section would result in key residual negative impacts of HIGH significance in relation to social impacts associated with reduction of access points onto the proposed toll highway.</p> <p>The following key residual negative impacts of MEDIUM significance are anticipated:</p> <ul style="list-style-type: none"> • Impacts associated with water quality changes in estuaries during the operational phase; • Resettlement of affected households; • Rural severance effects; • Urban severance effects; • Impacts associated with graves; • Visual impacts associated with the proposed Candu mainline toll plaza; and • Planning/development implications for Butterworth and Dutywa. 	<p>The following key residual positive impacts of POSITIVE HIGH significance are anticipated:</p> <ul style="list-style-type: none"> • Social impacts associated with increased employment opportunities during the construction phase; • Social impacts associated with improved safety for vehicle road users; • Social impacts associated with improved livestock safety; and • Tourism impacts associated with an increase in the number of tourism products. <p>Key residual positive impacts of POSITIVE MEDIUM or POSITIVE MEDIUM-HIGH significance are anticipated in relation to the following:</p> <ul style="list-style-type: none"> • Social impacts associated with increased employment opportunities during the operational phase; • <u>Social impacts associated with improved traffic flow;</u> • Tourism impacts associated with an increase in growth in transit tourists on a KZN/Eastern Cape/Western Cape route; • Planning/development impacts associated with nodal points at Qunu and Viedgesville; and • Planning/development implications for Mthatha.

ROAD SECTIONS	KEY RESIDUAL NEGATIVE IMPACTS	KEY RESIDUAL POSITIVE IMPACTS
MTHATHA (NGQELENI) TO NDWALANE	<p>It is anticipated that the proposed works along this road section would result in key residual negative impacts of MEDIUM significance in relation to the following:</p> <ul style="list-style-type: none"> • Disruption of faunal movement during the operational phase; • Faunal impacts associated with noise and light pollution; • Impacts associated with water quality changes in estuaries during the operational phase; • Social impacts associated with resettlement of affected households; • Rural severance effects; • Negative influences on existing family networks and social structures; • Tourism impacts associated with increased access to environmentally sensitive areas; and • Impacts associated with graves. 	<p>The following key residual positive impacts of POSITIVE HIGH significance are anticipated:</p> <ul style="list-style-type: none"> • Social impacts associated with increased employment opportunities during the construction and operational phase; • Social impacts associated with improved safety for vehicle road users; • Social impacts associated with improved livestock safety; and • Tourism impacts associated with an increase in the number of tourism products. <p>Key residual positive impacts of POSITIVE MEDIUM or POSITIVE MEDIUM-HIGH significance are anticipated in relation to the following:</p> <ul style="list-style-type: none"> • Social impacts associated with improvement in transport provision; • Tourism impacts associated with an increase in growth in transit tourists on a KZN/Eastern Cape/Western Cape route; and • Planning/development implications for the Thombo area.

ROAD SECTIONS	KEY RESIDUAL NEGATIVE IMPACTS	KEY RESIDUAL POSITIVE IMPACTS
NDWALANE TO NTAFUJU RIVER	<p>It is anticipated that the proposed works along this road section would result in key residual negative impacts of HIGH significance in relation to the following:</p> <ul style="list-style-type: none"> • Faunal impacts associated with loss of sensitive habitats during construction; • Impacts on estuaries associated with improved access; and • Noise impacts associated with operation of the proposed toll highway. <p>The following key residual negative impacts of MEDIUM significance are anticipated:</p> <ul style="list-style-type: none"> • Vegetation and flora impacts associated with loss of habitat, loss of biodiversity and fragmentation of habitat; • Vegetation and flora impacts associated with increased accessibility of remote habitats; • Vegetation and flora impacts associated with reduction in resilience/stability of ecosystems; • Faunal impacts associated with loss of faunal diversity and loss of Species of Special Concern; • Disruption of faunal movement during the operational phase; • Faunal impacts associated with chemical pollution; • Faunal impacts associated with noise and light pollution; • Impacts associated with water quality changes in estuaries during the operational phase; • Social impacts associated with increased safety hazards for pedestrians and traffic; • Social impacts associated with loss of use of the existing road reserve; • Rural severance effects; • Negative influences on existing family networks and social structures; • Tourism impacts associated with increased access to environmentally sensitive areas; • Impacts associated with graves; and • Visual impacts associated with the proposed new bridges. 	<p>The following key residual positive impacts of POSITIVE HIGH significance are anticipated:</p> <ul style="list-style-type: none"> • Social impacts associated with increased employment opportunities; • Social impacts associated with improved safety for vehicle road users; • Social impacts associated with improved livestock safety; and • Tourism impacts associated with an increase in the number of tourism products. <p>Key residual positive impacts of POSITIVE MEDIUM or POSITIVE MEDIUM-HIGH significance are anticipated in relation to the following:</p> <ul style="list-style-type: none"> • Social impacts associated with improvement in transport provision; and • Tourism impacts associated with an increase in growth in transit tourists on a KZN/Eastern Cape/Western Cape route.

ROAD SECTIONS	KEY RESIDUAL NEGATIVE IMPACTS	KEY RESIDUAL POSITIVE IMPACTS
NTAFUFU RIVER TO LUSIKISIKI (MAGWA INTERSECTION)	<p>It is anticipated that the proposed works along this road section would result in key residual negative impacts of HIGH significance in relation to impacts on estuaries as a result of improved access.</p> <p>The following key residual negative impacts of MEDIUM significance are anticipated:</p> <ul style="list-style-type: none"> • Loss of faunal diversity; • Invasion of faunal species; • Impacts associated with water quality changes in estuaries during the operational phase; • Social impacts associated with an increased risk of HIV/AIDS; • Social impacts associated with construction-related traffic delays; • Resettlement of affected households; • Rural severance effects; • Negative influences on existing family networks and social structures; • Tourism impacts associated with increased access to environmentally sensitive areas; and • Impacts associated with graves. 	<p>The following key residual positive impacts of POSITIVE HIGH significance are anticipated:</p> <ul style="list-style-type: none"> • Social impacts associated with increased employment opportunities during the construction and operational phase; • Social impacts associated with improved safety for vehicle road users; • Social impacts associated with improved livestock safety; and • Tourism impacts associated with an increase in the number of tourism products. <p>Key residual positive impacts of POSITIVE MEDIUM or POSITIVE MEDIUM-HIGH significance are anticipated in relation to the following:</p> <ul style="list-style-type: none"> • Social impacts associated with improvement in transport provision; • Tourism impacts associated with an increase in growth in transit tourists on a KZN/Eastern Cape/Western Cape route; and • Planning/development implications for the Mbotyi tourism node.

ROAD SECTIONS	KEY RESIDUAL NEGATIVE IMPACTS	KEY RESIDUAL POSITIVE IMPACTS
LUSIKISIKI (MAGWA INTERSECTION) TO MTHAMVUNA RIVER	<p>It is anticipated that the proposed works along this road section would result in key residual negative impacts of HIGH significance in relation to the following:</p> <ul style="list-style-type: none"> • Faunal impacts associated with loss of sensitive habitats during construction; • Impacts on estuaries associated with improved access; and • Noise impacts associated with operation of the proposed toll highway. <p>The following key residual negative impacts of MEDIUM significance are anticipated:</p> <ul style="list-style-type: none"> • Vegetation and flora impacts associated with loss of habitat, loss of biodiversity and fragmentation of habitat; • Vegetation and flora impacts associated with increased accessibility of remote habitats; • Vegetation and flora impacts associated with reduction in resilience/stability of ecosystems; • Faunal impacts associated with loss of faunal diversity and loss of Species of Special Concern; • Disruption of faunal movement during the operational phase; • Faunal impacts associated with chemical pollution; • Faunal impacts associated with noise and light pollution; • Impacts associated with water quality changes in estuaries during the operational phase; • Social impacts associated with increased safety hazards for pedestrians and traffic; • Social impacts associated with loss of use of the existing road reserve; • Rural severance effects; • Negative influences on existing family networks and social structures; • Tourism impacts associated with increased access to environmentally sensitive areas; • Impacts associated with graves; and • Visual impacts associated with the proposed new bridges. 	<p>The following key residual positive impacts of POSITIVE HIGH significance are anticipated:</p> <ul style="list-style-type: none"> • Social impacts associated with increased employment opportunities; • Social impacts associated with improved safety for vehicle road users; and • Tourism impacts associated with an increase in the number of tourism products. <p>Key residual positive impacts of POSITIVE MEDIUM or POSITIVE MEDIUM-HIGH significance are anticipated in relation to the following:</p> <ul style="list-style-type: none"> • Social impacts associated with improvement in transport provision; and • Tourism impacts associated with an increase in growth in transit tourists on a KZN/Eastern Cape/Western Cape route.
MTHAMVUNA RIVER TO ISIPINGO INTERCHANGE	<p>It is anticipated that the proposed works along this road section would result in key residual negative impacts of MEDIUM significance in relation to the following:</p> <ul style="list-style-type: none"> • Faunal impacts associated with noise and light pollution; and • Impacts associated with water quality changes in estuaries during the operational phase; • Social impacts associated with construction-related traffic delays; and • Impacts associated with anticipated increased traffic volumes and the proposed Isipingo Toll Plaza in the Prospecton area. <p>Applicable noise mitigation associated with the proposed Adams Road ramp toll plazas and the proposed additional lanes between the Amanzimtoti River bridge and the Isipingo Interchange would need to be determined and incorporated at the detailed design stage, with due regard to cost implications of each alternative and/or combined noise mitigation procedure.</p>	<p>Key residual positive impacts of POSITIVE HIGH significance are anticipated in relation to social impacts associated with increased employment opportunities during the construction and operational phase.</p>

COMPARATIVE ASSESSMENT OF ALTERNATIVES 5E AND 5G VERSUS THE SANRAL PREFERRED ROUTE ACROSS THE MSIKABA RIVER (refer to Figure 7)

Alternative 5e is considered the least favourable route alignment from vegetation/flora and faunal perspectives since it would result in most severe impacts on forests and faunal habitat, including disturbance to Lanner Falcon nests on the cliffs at the Mateku Waterfall, and would pose the greatest potential risk of erosion. While Alternative 5g would be marginally favoured over the SANRAL preferred route (Alternative 5g4) from a botanical point of view, it is less favoured in terms of potential noise impacts. However, Alternatives 5e and 5g would both result in potential residual impacts of **MEDIUM** and **HIGH** significance on wetlands and are thus considered unfavourable from an aquatic ecosystems perspective. Thus, consideration of the overall implications of the various alternative alignments across the Msikaba River indicates that the SANRAL preferred route (Alternative 5g4) would result in the least overall impacts on the affected environment. It should be noted, however, that the SANRAL preferred route would result in potential residual impacts of **HIGH** significance in terms of loss of habitat, increased accessibility of remote areas, loss of biodiversity and noise.

COMPARATIVE ASSESSMENT OF ALTERNATIVE 9D5 VERSUS THE SANRAL PREFERRED ROUTE ACROSS THE MTHENTU RIVER (refer to Figure 8)

The SANRAL preferred route would be favoured in terms of fauna, aquatic ecosystems, soils, land use and agriculture and social aspects, although potential residual impacts of the two alignments are the same. Neither alignment is considered more favourable from botanical and cultural/historical heritage perspectives. In terms of potential noise impacts, certain sections of both routes are considered more suitable than the other. Thus, on balance, the SANRAL preferred route (Alternative 9e) is considered more favourable. It should be noted, however, that potential residual impacts of **HIGH** significance are anticipated in terms of loss of habitat, loss of biodiversity and noise.

COMPARATIVE ASSESSMENT OF THE COASTAL MZAMBA ROUTE VERSUS THE SANRAL PREFERRED ROUTE BETWEEN LUSIKISIKI (MTHENTU RIVER) AND THE MTHAMVUNA RIVER (refer to Figures 3 and 4)

The Coastal Mzamba route would offer a number of advantages over the SANRAL preferred route between the Mthentu and Mthamvuna rivers, in particular relating to its compatibility with the Wild Coast Spatial Development Framework's (SDF's) proposed Land Use Management Areas and lower potential social and visual impacts. Also, should uncontrolled ribbon development or attraction of settlements take place along the SANRAL preferred route, this would affect a greater proportion of the planned area for the proposed Wild Coast/Pondoland National Park and identified "nature tourism" zones.

In many other respects, especially in terms of direct, indirect and cumulative biophysical impacts associated with the presence of numerous source wetland areas, the Coastal Mzamba route is considered less favourable than the SANRAL preferred route. Key differences in this regard relate to loss and fragmentation of habitat and water quantity impacts on the indirectly affected estuaries.

Thus, the key factor to consider in selecting a preferred route is whether the relative importance attached to compatibility with the Wild Coast SDF's Land Use Management Areas and the additional area (4 %) of the proposed Park that would be incorporated east of the Coastal Mzamba route outweighs the likely direct, indirect and cumulative impacts on aquatic ecosystems that would be associated with this route. In terms of economic aspects, the economic specialist study calculated the Present Worth of Cost of the Coastal Mzamba route (R 1,597.91 million) to be marginally higher than the SANRAL preferred route (R1,587.59 million). Thus, from an economic (and technical - primarily associated with construction of a major road through numerous wetland areas) perspective the Coastal Mzamba route would be less

favourable. However, irrespective of the selected route, it should be ensured that political and institutional will and capacity is developed to undertake pro-active and structured development planning, review and/or development of detailed Land Use Management Systems and liaison between Traditional Authorities and Municipalities with regard to allocation of land according to a common vision for ecologically sustainable development, if the proposed project is approved.

COMPARATIVE ASSESSMENT OF ALTERNATIVES 10A AND 10E VERSUS THE SANRAL PREFERRED ROUTE ACROSS THE MNYAMENI RIVER (refer to Figure 9)

The key differences between the various alternative route alignments across the Mnyameni River relate to potential impacts associated with loss of habitat, loss of biodiversity, fragmentation of habitat, aquatic ecosystems (wetlands) and cultural and historical heritage. Since the SANRAL preferred route would generally result in lower impacts than Alternatives 10a and 10e it is considered the most favourable alignment. It should be noted, however, that potential residual impacts of **HIGH** significance are anticipated in terms of potential noise impacts, irrespective of the selected route.

4.1.2 COMPARATIVE ASSESSMENT OF ALTERNATIVE MAINLINE TOLL PLAZA LOCATIONS

ALTERNATIVE NDWALANE MAINLINE TOLL PLAZA LOCATION VERSUS THE SANRAL PREFERRED NDWALANE LOCATION

The Alternative Ndwalane mainline toll plaza would, overall, be more favourable than SANRAL's preferred Ndwalane mainline toll plaza location in terms of potential impacts relating to vegetation and flora, aquatic ecosystems and visual aspects. Moreover, the SANRAL preferred location would result in key potential residual impacts associated with potential loss of habitat.

ALTERNATIVE MTHENTU MAINLINE TOLL PLAZA LOCATION VERSUS THE SANRAL PREFERRED MTHENTU LOCATION

The key difference between the two alternative mainline plaza locations relates to potential residual visual impacts. The Alternative Mthentu Toll Plaza location is considered more favourable as it would result in lower potential visual impacts. Also, although the significance ratings for potential residual impacts on aquatic ecosystems are the same, it is considered that the Alternative Mthentu mainline toll plaza location would be preferred since it would avoid the risk of any potential negative impacts on larger wetland habitats. Key potential residual impacts on vegetation and flora are anticipated in terms of possible strip/ribbon/secondary development, irrespective of the selected mainline toll plaza location.

4.2 PROJECT-SCALE AND TOLL FUNDING-RELATED ISSUES

VEGETATION AND FLORA

Overall impacts on the Pondoland Centre of Endemism

It is clear from published information on the PCE that it has a high conservation/biodiversity value and that it has been identified as having high conservation priority. Any impact that reduces the overall area of the PCE, reduces the ecological integrity of the area or would result in losses of key biodiversity components is potentially serious.

The assessment has shown that the proposed new road would result in residual impacts of **HIGH** significance in terms of loss of habitat, fragmentation of habitat, strip/ribbon/secondary development and increased accessibility of remote habitats.

An analysis of the impacts associated with a reduction in the opportunity to undertake effective conservation, biodiversity conservation planning or establish conservation areas in the region indicates that the SANRAL preferred alignment potentially reduces the core area of the proposed park to 88% of its planned area while the Coastal Mzamba alignment would result in this included proportion becoming almost 92% of the desired area.

Ecological sustainability

The development of the proposed new road could potentially lead to some *loss of biological diversity*. It is unlikely to lead to a change in conservation status of any species but may lead to a change in conservation status (from Vulnerable to Endangered) of a vegetation type (Pondoland-Ugu Sandstone Coastal Sourveld) if all indirect and/or cumulative impacts are realised. [* Note: This assessment is based on Driver *et al.*, 2005 and Mucina & Rutherford, 2006. However, according to the “Draft National List of Threatened Ecosystems” (published under the provisions of the National Environmental Management: Biodiversity Act, 2004 in General Notice 1477 of 6 November 2009) Pondoland-Ugu Sandstone Coastal Sourveld is “Not Listed”. If the current List remains unchanged, the implications would be that the reclassification of Pondoland-Ugu Sandstone Coastal Sourveld would be from “Not Listed” to “Vulnerable”, the latter being a less serious conservation status than “Endangered”.]

The proposed new road may threaten some local scale *ecological process*. At a regional scale the proposed new road is thought to present a barrier that may result in dispersal and migration processes in a coastal-inland direction being affected, but is unlikely to affect regional scale movement of water or nutrients through the landscape.

There is a risk of *exceeding thresholds* at a local scale (primarily loss of habitat due to direct and indirect impacts), but these can be controlled by the implementation of mitigation measures (assuming management commitment and effective monitoring and reporting). There is less risk of exceeding thresholds at a regional scale, except for the overall loss of habitat due to direct and indirect impacts - the loss of habitat within Pondoland-Ugu Sandstone Coastal Sourveld could lead to a change in conservation status from Vulnerable to Endangered [refer to “*Note” above], which indicates that the threshold beyond which ecosystem processes and patterns can be maintained is being approached.

At a local scale, the road may *threaten some key ecological process* linked to life support systems, but this effect dissipates quickly with distance from the road and is unlikely to be important at a regional scale.

Pondoland grasslands are potentially at risk from the proposed new road and its associated impacts. The potential threat of the proposed new road to *protected, important, unique, sensitive, irreplaceable areas* is therefore potentially significant in the absence of effective conservation management of the area.

The proposed road cannot be considered potentially responsible for *exacerbating human-induced climate change*.

The proposed road would lead to the direct loss of areas of grassland in greenfields areas as well as some forest, which is considered by definition to be *irreversible loss of natural capital*. Due to the highly sensitive nature of the PCE as a whole, any loss of habitat may be considered to be incremental reduction in the ecological viability of the area. The proposed new road may therefore be considered to lead to irreversible loss of natural capital that is potentially significant.

It is considered unlikely that there are any *impacts that are unknown or uncertain* although there is some uncertainty about impacts in the study area due to social factors in the absence of the proposed project taking place.

It is considered very difficult to attribute *substantial negative cumulative impacts* to the presence of the proposed new road rather than current trends within the PCE area. It is estimated that the proposed new road and its potential indirect and/or cumulative impacts (including possible strip/ribbon/nodal development) could lead to sufficient loss of habitat to result in Pondoland-Ugu Coastal Sourveld being re-categorised as an Endangered vegetation type [refer to “*Note” above]. It is likely that other proposed projects in the area would further exacerbate this loss of habitat and make it more likely that habitat loss would lead to re-categorisation of the vegetation type.

On the basis of the above criteria, the proposed new road is considered not ecologically sustainable. However, if indirect and/or cumulative impacts can be controlled and conservation measures can be put in place to effectively protect core components of the PCE then the assessment of five of these criteria may be reversed/become insignificant and the proposed project could then be considered to be ecologically sustainable.

Given the potential significant residual negative impacts of the proposed project (in particular the greenfields sections) on natural habitats, and uncertainties associated with the control of potential indirect and/or cumulative impacts and future biodiversity conservation measures to be effected in the Pondoland area, it is recommended that a Biodiversity Offset agreement be developed and implemented. Initial discussions with the relevant national authorities have indicated that the “normal” Biodiversity Offset – i.e. acquiring “like for like” land – would not necessarily represent the most appropriate type of Biodiversity Offset in light of the nature of the land tenure system in the affected area. Feasible alternative options (e.g. a trust fund) would need to be considered and evaluated. Details of the most appropriate type (and cost) of Biodiversity Offset would need to be informed by further specialist (including legal) input, as appropriate, and engagement between SANRAL and the relevant national and provincial conservation authorities. SANRAL has committed itself to the development and implementation of such a Biodiversity Offset agreement.

AQUATIC ECOSYSTEMS

Although the systems within the study area were found to be largely in a natural condition, current land use practices, sand winning, poor secondary roads and bridges, and alien plant infestations have impacted on the status of the aquatic environment. In the interests of pro-active environmental management, future developments should thus not result in further degradation. Areas of particular concern are the greenfields routes, where the majority of the headwaters already require some form of rehabilitation due to the impacts mentioned above. Rivers that presently require rehabilitation would include, amongst others, the Mzimvubu, Kwadlambu and Mnyameni rivers, but concerted effort to eradicate all alien plants throughout the entire study area would be required.

With implementation of suitable mitigation and proactive management most of the impacts related directly to the proposed toll highway could be managed. SANRAL should take as many precautions to manage and monitor all phases of the development and should form part of any forum to manage the region.

SOCIAL

The upgrading of the route between Gonubie Interchange and Mthatha would likely vastly improve the safety of this section of road and could lead to a reduction in serious road accidents. Death and severe

injury are amongst the most severe of negative social impacts and that any significant progress in reducing injury and death would have a high and positive social impact.

Along the section between Mthatha and the Mthamvuna River, despite the anticipated negative impacts associated with development in greenfields areas, the overwhelming opinions of people consulted was a need for greater access into the area. Reasons given for this varied from a need to ease the burden of travel into and out of the area, providing better access to health and other services and the creation of jobs.

One of the significant issues identified is the potential negative impacts of tolling the existing section of road between Port Shepstone and the Isipingo Interchange. This issue relates to the availability of alternative routes, travel options, economics and the political reasons for tolling.

Although not entirely within the control of SANRAL, the matter of capacity amongst the various role players along the route is also of concern. Consequently, if the project were to proceed, it would be important for all authorities to consider the need to coordinate their efforts towards making the project a success.

Overall, it is considered that the potential social benefits of the proposed project, as assessed along the entire route, and if enhanced as recommended, would outweigh the potential negative impacts, and that the proposed project would be of social benefit on a national basis as well as being beneficial for both the Eastern Cape and KwaZulu-Natal provinces.

In order to minimise the anticipated negative impacts and enhance potential benefits, it is recommended that key policies and plans (such as resettlement, employment, skills development, community empowerment, etc.) be developed to effectively manage key social issues associated with the proposed project. It is also recommended that a social monitoring and evaluation programme be developed for the construction phase of the proposed project.

TRAFFIC DIVERSION

It is apparent from the capacity analysis that the N2 between Prospecton and Moss Kolnik is running close to or exceeding capacity in the so-called design hour (the 30th highest hourly volume of the year), while the R102 is currently still operating at acceptable levels of service.

The highly probable impact of traffic diversion along the N2 Prospecton-Southbroom section onto the R102 is assessed to be of **medium** and **high** intensity and significance during the construction and operational phases, respectively. Implementation of the mitigation measures would reduce the traffic diversion impact to **LOW** significance during the construction and operational phases.

Three alternative mitigation options have been identified, as follows:

- Introduction of a system to allow local users on the N2 Prospecton-Winklespruit, Winklespruit-Hibberdene and Hibberdene-Southbroom sections to pay a toll tariff directly related to the distance of the toll section that they actually use (i.e. a local user discount preferably linked to the use of electronic toll tags);
- Include visitors into the local user discount scheme (since frequent visitors may become toll road avoiders) by equipping toll lanes at the planned physical plazas with ETC readers and erection of Open Road Tolling gantries on appropriate interchange ramps in order to effectively create closed ETC systems on the N2 Prospecton-Winklespruit and Winklespruit-Hibberdene sections and, ideally, also on the Hibberdene-Southbroom section; and

- A third alternative could be implemented if a decision were made, in future, that the upgraded freeways of the Durban metropolitan area would be tolled by means of Open Road Tolling (a process in terms of which vehicles are tolled electronically whilst travelling at normal highway speeds in a free flow traffic situation and where no stopping or speed reduction is required for toll payment purposes). In the event that an Open Road Tolling approach should be considered for the Durban-Pietermaritzburg area, it would be feasible to use such a toll strategy for the proposed tolling of the N2 Prospecton-Winklespruit section.

It should be noted that the recent completion of the Arbour Town Mall and associated developments west of the N2 between the Moss Kolnik Drive and Dickens Road interchanges would create an additional alternative for traffic from the Moss Kolnik Interchange (or further south) travelling to/from Durban. This alternative (Arbour Town Street/Oppenheimer/Kynoch/Old Main Road) would be slightly longer in length and travel time than the R102 between the Moss Kolnik and Prospecton interchanges. To the extent that the Arbour Town Street/Oppenheimer/Kynoch/Old Main Road alternative route may attract some of the remaining diverted R102 traffic (approximately 100 vehicles per day) after implementation of the recommended mitigation measures, it would be further reducing the potential residual traffic diversion impact on the R102 (assessed to be of **LOW** significance).

NOISE

The existing day-time noise rating level of 74 dBA on residential land flanking Kingsway, Umbogintwini, is exceptionally high - exceeding the acceptable outdoor day-time noise rating level in a suburban district (with little road traffic) by 24 dB and in an urban residential district by 19 dB. Based on the Annual Daily Traffic (ADT) values the predicted increase in the day-time noise rating level over the subsequent 10 and 15 years would be barely significant, with or without tolling of the existing N2. However, any increase would exacerbate an already unacceptably high exposure to road traffic noise on residential land in this suburb. The existing, and potential future noise impact along on the alternative R102 at Umbogintwini and similar land further south along the R102 (without and with tolling of the existing N2), is assessed to be of **VERY HIGH** intensity and significance. In this instance, inadequate planning has resulted in a situation whereby technical noise mitigation alternatives cannot be practically implemented.

The rehabilitation of the existing R102 road surface with a low-noise road surface would result in a reduction in noise emission to levels below existing levels even after the increase in traffic predicted after 15 years without or with tolling. This represents the limit of technical mitigation procedures that could be applied to the R102 directly adjacent to properties. Attracting through-traffic away from the R102 onto the N2 by non-tolling of the N2 skirting residential suburbs south of Durban, or effective implementation of the traffic diversion mitigation measures recommended above, would result in a further modest reduction in noise levels.

AIR QUALITY

It is predicted that potential localised air quality impacts on the R102 and R620 alternative routes would be of **LOW-MEDIUM** intensity and significance without and with mitigation. It is considered unlikely that the significance of the potential impact could be reduced. However, it is recommended that discussions be held with the local municipalities, in particular the eThekweni Municipality, to address the long-term plans for air quality management in the relevant areas.

TOURISM

Impacts on bypassed towns on the existing N2

Towns along the existing N2 between Mthatha and Port Shepstone include Qumbu, Mount Frere, Mount Ayliff, Kokstad and Harding. These towns rely primarily on transit along the existing N2 section. Most of the towns on the existing N2 section are undeveloped as tourism destinations. However, Kokstad and Harding have become stop-over destinations. The potential negative tourism impacts on bypassed towns on the existing N2 are deemed to be of **MEDIUM** intensity and significance without and with mitigation.

High-volume tourism versus eco-tourism

The tourism specialist believes that there is room for more intensive tourism developments on the Wild Coast as well as eco-tourism enterprise. This is seen to be particularly the case if the proposed Wild Coast/Pondoland National Park plans go ahead, but with the number of nature reserves in the area it is considered that eco-tourism will be viable with or without the proposed Park.

ECONOMIC

Overall economic sustainability

The economic analysis indicates that the proposed project, given the various assumptions (of which the most critical were those related to the value of time and the traffic growth rate), would definitely be economically justified, with an IRR of 15.4 %. The proposed project is also considered to be financially viable, with an IRR of 10.4 %. In the financial analysis it was assumed that the toll income would be 75 % of the total savings in road user costs.

The freeway section between Winklespruit and Isipingo Interchange would, similarly, be economically justified, with an IRR of 37.9 %.

In addition to being justified from a micro-economic viewpoint, the project's "very good" one-off income-multiplier effect and significant recurring non-user benefits would support the macro-economic objectives of (1) full employment, (2) economic growth, (3) price stability, and (4) equitable distribution of income. On aggregate it is considered that the proposed project would make a significant contribution to the primary macro-economic goal of improving the wealth of the Eastern Cape and KwaZulu-Natal provinces. In view of the fact that these benefits would not be diverted or transferred from other provinces, but be generated locally, the average annual net macro-economic gain of R 2,612 million would also accrue to the country as a whole (i.e. the road would be instrumental that South Africa's national product increases by R 2,612 million annually).

PLANNING/DEVELOPMENT

Compatibility of the proposed toll highway (in particular the greenfields sections) with relevant Eastern Cape regional and strategic planning initiatives

An evaluation of the compatibility of the proposed toll highway (in particular the greenfields sections) with eight Eastern Cape regional and strategic planning initiatives reveals the following:

- The proposed toll highway would be compatible with five of the eight planning initiatives, namely the Wild Coast Tourism Development Policy, the Wild Coast SDI, the Provincial Growth and Development Plan, the Eastern Cape Spatial Development Plan (SDP) and the Eastern Cape Tourism Master Plan;
- The proposed toll highway is considered incompatible with the Wild Coast SDF since the greenfields sections, in particular, would traverse areas earmarked as "Nature Tourism" and "No Development" zones. Furthermore, the Wild Coast SDF does not incorporate any alignment of the proposed toll

highway into its spatial planning and expresses the view that the proposed project would result in significant (negative) ecological, social and economic impacts:

- The Wild Coast SEA recommends a re-alignment of the greenfields sections of the proposed toll highway and states that the proposed toll highway could only be sustainable if the alignment formed the boundary of the PCE. Note that the findings of the FSR indicate that a route north-west of the Msikaba Sandstone Formation that would avoid the PCE would be most favourable in terms of limiting potential impacts on ecologically sensitive habitats but would affect the highest number of homesteads and businesses. Furthermore, it was not considered viable from financial and economic perspectives. Such a route was thus not carried forward for further investigation in the Impact Assessment phase of the EIA. Thus, the proposed toll highway is considered incompatible with the SEA's recommended re-alignment of the greenfields sections to form the boundary of the PCE; and
- The SANRAL preferred and Coastal Mzamba routes would not have a major impact on the potential to undertake biodiversity conservation planning in the PCE area and are thus not considered incompatible with the proposed Wild Coast/Pondoland National Park. However, the Coastal Mzamba route would be more favourable in this regard.

4.3 OVERALL KEY RESIDUAL IMPACTS OF THE PROPOSED PROJECT

The identified overall key residual positive and negative impacts that would result from the proposed project (improved access and linkage to the region, in particular the Wild Coast area, through a shorter and safer road link between the Eastern Cape/Western Cape and KwaZulu-Natal) are set out below. The overall key residual positive impacts include aspects relating to the financial and economic viability of the proposed project (such as reduced road user costs), potential regional developmental economic benefits, employment opportunities, increased tourism products, improved livestock safety on the Eastern Cape sections of the existing N2 and R61 and improved safety for vehicle road users.

The overall key residual negative impacts include aspects relating to loss and/or degradation of sensitive natural habitats due to direct, indirect and/or cumulative impacts, possible impacts on estuaries associated with improved access to the region, potential impacts of traffic diversion on the volume/capacity ratio of available alternative routes in KwaZulu-Natal (if full toll tariffs were charged), and potential noise impacts on certain noise sensitive areas.

OVERALL KEY RESIDUAL POSITIVE IMPACTS

The following overall key residual positive impacts would result from the proposed project:

- a) The proposed toll highway should benefit all users along the entire length of the road if the principle that “the toll fee is less than the road user benefits” is applied. Benefits include (1) reductions in road user costs (where road user costs comprise vehicle operating costs plus travel time cost plus accident cost) and/or (2) road user revenue increases as a result of new road usage. The largest portion of the benefits to road users would accrue in the Eastern Cape because this would be where the major distance saving would occur and most new business would be created. The economic analysis indicates that the proposed project, given the various assumptions (of which the most critical were those related to the value of time and the traffic growth rate), would definitely be economically justified, with an IRR of 15.4 %. The proposed project is also considered to be financially viable, with an IRR of 10.4 %. In the financial analysis it was assumed that the toll income would be 75 % of the total savings in road user costs;
- b) The proposed additional lanes along the freeway section between Winklespruit and Isipingo Interchange would, similarly, be economically justified, with an IRR of 37.9 %;

- c) The regional income-multiplier effect would increase the present (2007) value of the investment amount of R 4,309 million to an eventual once-off regional gross income of R 17,884 million. After deduction of this investment amount, the net increase in one-off regional income is expected to equal R 13,575 million;
- d) Once the road is in operation regional economic income would be accelerated on a recurring basis. The following economic sectors in the Eastern Cape and KwaZulu-Natal would enjoy increased income: (1) agriculture; (2) forestry; (3) manufacturing; (4) construction (i.e. property development); (5) finance and real estate; and (6) trade, tourism and catering. The estimated present (2007) value of this additional income is approximately R 15,829 million;
- e) The present (2007) value of the net regional developmental economic benefits that implementation and use of the proposed toll highway would yield is the total of the net regional income-multiplier effect of R 13,575 million, and the present value of accelerated business income of R 15,829 million. These add up to R 29,404 million. Over the 30-year analysis period of the road at a real discount rate of eight percent this value is equivalent to additional domestic income of R 2,612 million per annum;
- f) Although the proposed new link between Mthatha and Port Edward would attract traffic from the existing N2 route, the newly generated traffic benefits on the proposed new road would by far exceed any reduction of business on the existing road section. It is estimated that traffic generation in the first year of operation would translate into an economic benefit of over R 500 million in the Eastern Cape Province and KwaZulu-Natal. Of this, approximately R 150 million would accrue to existing and new business between Mthatha, Port St Johns and Port Edward);
- g) Approximately 6 800 project-related jobs would be generated annually during the construction phase. There is a high probability to generate up to 21 300 indirect or non-project-related jobs annually during this phase, resulting in a total employment creation of 28 100 jobs annually during construction. This would have a positive economic impact on a regional level in the short term;
- h) During the service period of the road there is the potential to generate approximately 900 directly road-related permanent (sustainable) jobs annually. Usage and operation of the road would generate approximately 18 000 indirect job opportunities per annum, resulting in an average employment creation of 18 900 jobs annually during the service period of the road;
- i) The proposed toll highway would result in an increase in the number of tourism products in the study area and an expected increase in growth in overnight tourists;
- j) It is anticipated that the proposed project would result in improved livestock safety on the Eastern Cape sections of the existing N2 and R61, that would be incorporated into the proposed toll highway, which are characterised by significant safety hazards associated with the presence of livestock on the road, providing fencing is kept intact; and
- k) The proposed toll highway would significantly improve safety for vehicle road users along the existing N2 through the former Transkei, which has been identified as amongst the most accident-prone roads in the country.

OVERALL KEY RESIDUAL NEGATIVE IMPACTS

The following overall key residual negative impacts would result from the proposed project:

- a) Reduction of access points along the section between Ngobozi and Mthatha would result in high numbers of users having to walk or drive greater distances to access the proposed toll highway and/or to get to their destinations. This would also have cumulative impacts on time and effort invested in other productive and domestic activities;
- b) The habitats which occur between Ndwalane and the Ntafufu River, such as the forest and thicket patches, are considered sensitive faunal habitats due to their isolated and fragmented nature. The proposed toll highway would bisect and thus increase the fragmentation of these habitats. An appropriate, scientifically grounded and legally binding Biodiversity Offset agreement between SANRAL, the competent authority and relevant national and provincial conservation authorities should be developed and implemented, as appropriate, if the proposed project is approved;
- c) Increased recreational and development-related pressures could be exerted on important and sensitive estuaries as a result of the anticipated improved access to the region. These could result in significant negative impacts on the ecological functioning and aesthetics of the estuaries, if not managed appropriately;
- d) The proposed new road would be located between 10 m and 250 m from numerous dwellings in the section from Ndwalane to the Ntafufu River. A noise barrier would have little effect due to the residences generally being at a higher elevation than the proposed new road while a low-noise road surface would only reduce the intensity of the noise at the nearest residences to 60 dBA;
- e) The construction of the proposed greenfields section between Lusikisiki and the Mthamvuna River would result in loss of habitat associated with Pondoland-Ugu Sandstone Coastal Sourveld vegetation. This vegetation type forms one of the two primary habitats constituting the PCE [refer to “*Note” above]. In a worst-case scenario (assuming construction activities occur across the entire road reserve rather than in a construction corridor of about 30 m) approximately 0.3 % of the remaining extent of this vegetation type would be lost directly as a result of construction of the proposed new road. However, it should be noted that a large proportion (more than 50 %) of the affected area between Lusikisiki and the Mthamvuna River has been transformed by cultivation;
- f) The proposed toll highway would result in fragmentation of habitat between the Mthentu and the Mthamvuna rivers. Vegetation and flora could be significantly impacted by way of impaired gene flow within fragmented populations and creation of edges. However, the area between the Mthentu and Mthamvuna rivers also suffers from the greatest degree of transformation and degradation due to cultivation;
- g) In a worst-case scenario (assuming that there would be no limitation to development along the coast due to increased accessibility of these areas as a result of the proposed new road), there could be a risk of significant loss (approximately 9.6 % of the remaining extent) of Pondoland-Ugu Sandstone Coastal Sourveld due to strip/ribbon/secondary development;
- h) The proposed new road and bridges over the Msikaba and Mthentu rivers would probably make previously inaccessible areas more accessible, especially for the removal of medicinal products and other species for which there may be horticultural interest. The current rates of harvesting of medicinal plants have already led to the depletion of many species near existing settlements;

- i) The proposed new road in the greenfields section between Lusikisiki and the Mthamvuna River would affect the ability of communities to continue utilising places and resources associated with the oral traditions and living heritage within the Amadiba Tribal Authority area. Also, the entire area may be considered as an integral part of an ethnographic landscape that has evolved over the last 1 000 years and would be significantly affected by the proposed new road;
- j) It is expected that the day-time noise rating level at residential dwellings located within 50 m of the proposed new road between Lusikisiki and the Mthamvuna River would be in excess of 65 dBA. In terms of the Noise Control Regulations noise mitigation would be required in order to ensure that the noise rating level does not exceed 65 dBA at any of the affected residential dwellings;
- k) Ribbon/strip/secondary development could gradually occur alongside the proposed new road between Lusikisiki and the Mthamvuna River. This would place a strain on Municipalities as a result of growing demands for new infrastructure and social services in these areas. As a consequence, large public-funded investments along the existing major routes may need to be re-prioritised to meet demands in the new areas, and competition for resources and delivery may occur;
- l) Significant negative impacts on the volume/capacity ratio on the R102 and, consequently, the level of service and quality of travel are predicted if full toll tariffs were charged at the mainline toll plazas in KwaZulu-Natal; and
- m) The existing day-time noise rating level of 74 dBA on residential land flanking Kingsway, Umbogintwini, and similar land further south along the R102, is exceptionally high. Based on the ADT values the predicted increase in the day-time noise rating level over the next 10 and 15 years would be barely significant, with or without tolling of the existing N2. However, any increase would exacerbate an already unacceptably high exposure to road traffic noise on residential land in this suburb.

5. RECOMMENDATIONS

5.1 RECOMMENDATIONS ON ALTERNATIVE ROUTE ALIGNMENTS

- a) From an overall environmental perspective neither of the two alternative alignments between Ndwalane and the Mzimvubu River represent a clearly favoured route option. Consideration of technical aspects indicate that the SANRAL preferred route (Alternative 1e) is more suitable since it would not require sections of the road to be raised to clear the 1:100 year floodline of the Mzimvubu River and would have better foundation conditions for the proposed Mzimvubu River bridge;
- b) Of the two alternative alignments assessed in the vicinity of the Ntafufu Village and the Ntafufu River, the SANRAL preferred route (Alternative 2f) is considered more suitable since Alternative 2a would result in additional impacts on the Ntafufu Senior Secondary School;
- c) The SANRAL preferred route (Alternative 5g4) for the crossing of the Msikaba River would result in the least overall impacts on the receiving environment and is thus considered the most favourable option;
- d) Of the two alternative alignments assessed for the crossing of the Mthentu River, the SANRAL preferred route (Alternative 9e) is, on balance, considered more favourable;
- e) Although the Coastal Mzamba route would offer a number of advantages over the SANRAL preferred route between Lusikisiki (the Mthentu River) and the Mthamvuna River (in particular relating to conservation planning, social and visual impacts), the most significant difference between the two routes relate to potential direct, indirect and cumulative impacts on the biophysical environment. Since the SANRAL preferred route would result in substantially less severe potential

impacts on the biophysical environment, and would be preferable from economic and technical perspectives, it is considered more favourable; and

- f) Since the SANRAL preferred route (Alternative 10c) would generally result in lower impacts than Alternatives 10a and 10e across the Mnyameni River, it is considered the most suitable alignment.

Thus, the SANRAL preferred route would, overall, be preferred over the other alternative route alignments in the specific road sections. Refer to Section 4.1 above for a description of the key potential negative impacts associated with the SANRAL preferred route in the various road sections.

5.2 RECOMMENDATIONS ON ALTERNATIVE MAINLINE TOLL PLAZA LOCATIONS

- a) The Alternative Ndwalane mainline toll plaza location is preferred over the SANRAL preferred Ndwalane Toll Plaza location since it would result in less severe potential impacts in terms of vegetation and flora, aquatic ecosystems and visual aspects; and
- b) The Alternative Mthentu mainline toll plaza location is considered more favourable than the SANRAL preferred Mthentu Toll Plaza location since it would result in lower potential visual impacts and would avoid the risk of any potential negative impacts on large wetland habitats.

Thus, the alternative mainline toll plaza locations would, overall, be preferred over the SANRAL preferred toll plaza locations.

5.3 FURTHER INVESTIGATIONS

- a) The potential noise impacts, and relevant noise mitigation measures, associated with the proposed Adams Road ramp toll plazas and proposed additional lanes between the Amanzimtoti River and Prospecton should be determined and incorporated during the detailed design stage; and
- b) A heritage practitioner should be appointed to undertake a supplementary inspection of limited sections of the approved alignment, in different terrain types, with the objective of determining the degree to which vegetation cover could have limited the discovery of any heritage resources; and
- c) Relevant specialist (including legal) input should be obtained in order to inform the development of an appropriate, scientifically grounded and legally binding Biodiversity Offset agreement between SANRAL, the competent authority and relevant national and provincial conservation authorities.

5.4 GENERAL RECOMMENDATIONS

- a) The management of all site preparation and construction activities should be undertaken by way of the compilation of a comprehensive Construction EMP which should include the identified key mitigation measures, as appropriate;
- b) Effective implementation and management of the Construction EMP should be ensured by appointment of a suitably qualified and experienced ECO;
- c) Recommendations applicable to the post-construction phase should be incorporated in an Operational EMP, including provision for ongoing monitoring and management; and
- d) Mitigation/enhancement measures applicable to any Concessionaire or Contractor should be formally included in their contract documentation, as appropriate.

5.5 KEY MITIGATION MEASURES

Section 16.7.3 (Table 16.6) of the Final EIR summarises the key mitigation measures applicable to the further planning and design, construction and operational phases of the proposed toll highway, as identified in the respective specialist reports. It also identifies the relevant party(-ies) responsible for implementation of the mitigation measures and additional resources required, where appropriate. This information will be incorporated into the Draft EMP which will, amongst others, also set out the requirements for the administration and management of all environmental obligations, including continued public communication and liaison, as appropriate. The above recommendations and mentioned key mitigation measures should be incorporated into any “conditions of approval”, as appropriate, if the proposed project were to be authorised.

5.6 GENERIC CONSTRUCTION-RELATED MITIGATION

Generic construction-related mitigation measures which should be incorporated into the Draft EMP, as appropriate, include the following:

- a) Vegetation stripping should occur in parallel with the progress of road construction to minimise erosion and/or run-off. Large tracts of bare soil will either cause dust pollution or quickly erode and then cause sedimentation in the lower portions of the catchment;
- b) All cut and fill slopes, as well as all areas disturbed by construction activity (including temporary access roads, laydown areas, etc.), should be appropriately stabilised/protected and rehabilitated as soon as possible after final shaping. Such progressive rehabilitation measures would allow the maximum growth period before the completion of construction. Where practical, roadside landscaping and revegetation should use species locally indigenous to the site;
- c) All areas affected by construction activities and where dust will be generated would require dust suppression by regular wetting, possibly by means of a water bowser, or by means of a soil-binding compound. Regularly monitor levels of dust generation on site; and
- d) All vehicles and construction machinery should be maintained to a standard that minimises noise and air pollution. Construction activities and vehicle movement should be restricted to daylight hours.

6. WAY FORWARD

The Final EIR will be submitted to DEA (and the relevant provincial environmental authorities) for consideration and decision-making. The Draft EMP will be submitted to the relevant authorities after submission of the Final EIR.

After decision-making by the competent environmental authority, a RoD will be issued to SANRAL setting out the decision, the reasons for the decision and any conditions thereof. All I&APs on the project database will be notified of the RoD and the statutory 30-day Appeal Period.